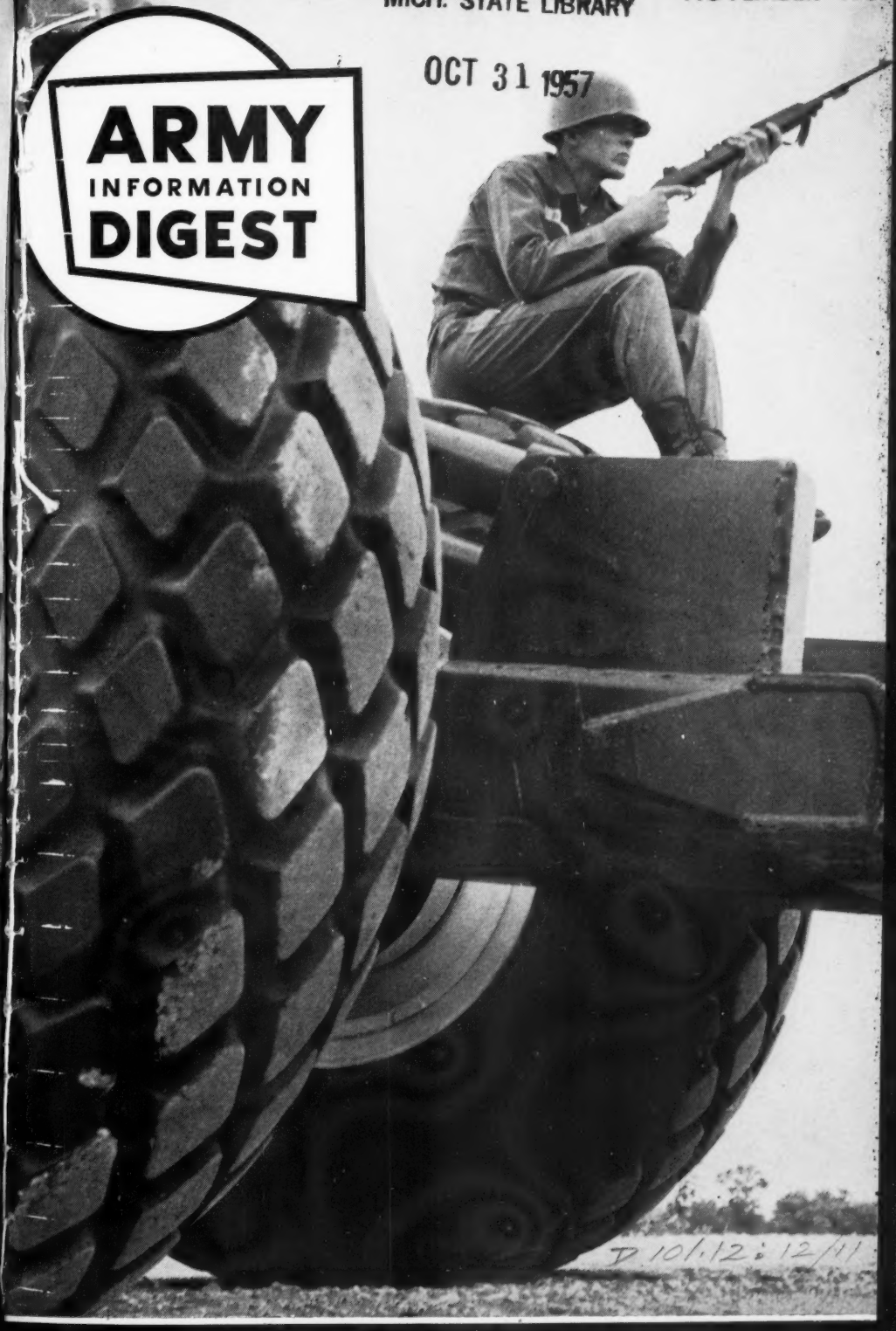
NOVEMBER 1957

ARMY INFORMATION DIGEST



THE OFFICIAL U. S. ARMY MAGAZINE

ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the active Army, National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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THE SOLDIER guarding his tractor on the front cover symbolizes the combat engineer's determination to complete the assigned mission despite obstacles of terrain, harassing sniper fire, or all-out enemy attack.

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Nike,

the world's most experience-proven guided missile,

is the mainstay of

ARMY ANTIAIR —

Lieutenant General S. R. Mickelsen

ON 10 OCTOBER the U. S. Army marked the fortieth anniversary of its antiaircraft artillery arm. For the millions of residents of American cities guarded by Nike guided missile units of the Army Air Defense Command, the birthday had more than passing significance.

In four decades U. S. Army antiaircraft artillery has advanced from crude field pieces whose muzzles were uplifted by the expedient of letting the trail dangle into pits, to futuristic, exceptionally accurate artillery rockets. Today combat-ready batteries are equipped with the most advanced air defense weapons in the world, with Nike missilemen trained and ready to fire in the event of an attack.

It is a monument to Army progress that in so brief a period the antiaircraft artillery arm could advance so far and, instead of losing its vitality, gain so much vigor with each successive stage of development. The last few years particularly have brought to the world public a certain knowledge that rocket missiles are the principal weapons of the future in a war of any size should it be necessary to fight one.

The ascendency of rocket missiles as the weapons with which we must deal has been proven by the fantastic success of the Army antiaircraft artillery in providing, first, guided missiles of the Nike family, and next, the Hawk, which does its own thinking.

Within the past few months the Army completed the initial program of Nike installations around our principal "target" cities. We are nearing a goal of complete conversion of the Regular Army units from guns to missiles. The first of the Army National Guard units, an honor accorded California's 720th AAA Battalion, is taking over as a guided missile outfit. The second missile in the Nike family, the powerful Hercules, is about to be integrated into the systems now on site and to be built. There is more and more talk about the Intercontinental Ballistic Mis-

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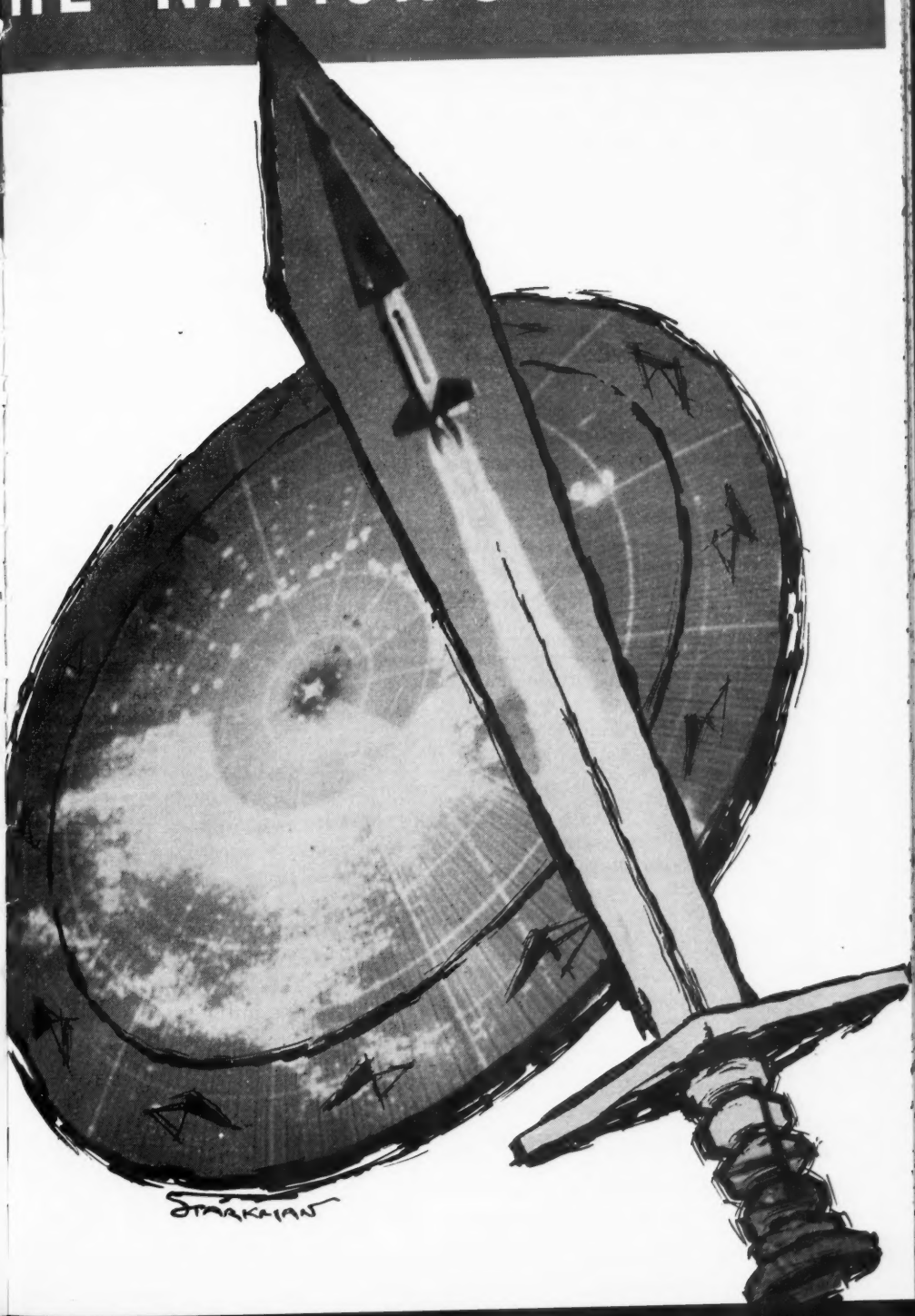
HE NATION'S SHIELD



sile (ICBM) and the question of a defense against it.

All of these are current topics that either provide answers to vexing problems or themselves demand answers. It is my most firm belief that all are more or less allied to one another. Thus the whole structure of adequate air defense cannot be examined except by inspection of our adequacy in the whole field.

For example, the capability of the Army National Guard and the Army Reserve to man these weapons would have a direct bearing on the adequacy of our defenses in the United States as long as the Regular Army is maintained at a minimum strength. Parenthetically, I consider that both the Army National Guard and the Army Reserve units located in the various states should very properly man a substantial number of the air defense elements. The Army National Guard has already demonstrated its capability to a fine degree.

AMERICA has long maintained that she is a peace-loving nation, which will not attack another nation unless first attacked. We shall not start a war—any kind of a war, big or small. But we shall oppose aggression.

Any foreign nation bent on aggression knows full well that it must first knock out the United States if it is to hope to succeed in a world war. To knock the United States out of the picture means that this nation must be successfully attacked throughout its length and breadth. In other words, we as a nation must be destroyed. Unless this is done, we shall rise in our awesome strength and retaliate with a devastating blow to the aggressor.

Simply stated, the United States can afford to have only the best possible air defense, one which holds a giant's shield of recognizable impregnability over the "target" areas which a potential enemy knows he must seek out and destroy in order to win.

Such a shield, poised in readiness, will deter a mindful enemy from brashly rushing into war; and it will stand ready to blunt and defeat an enemy who in an unreasoned moment might dare to start a global war by an attack on America.

Two great wars have demonstrated the amazing effects of America's overwhelming superiority in marshaling its resources—in time to bring all of its massed might to bear upon the aggressors.

Today America remains blessed with this great might which lies latent beneath the surface of peacetime production and preoccupation. Time has not changed that. However, technology and time have changed a dominant consideration that in the past permitted America to mass its arms and men for waging war—*i.e.*, geography. Land and sea masses which once were time barriers that took weeks and months to cross now can be hurdled in hours. So the shield must remain raised in constant readiness to ward off the initial attack which, this time, would fall directly on America.

Defense of the continental United States against air attack is a concerted effort. Each of the Armed Forces shares the mission and each has its own characteristic role to play. For the Army

this mission is translated into the role of antiair defense of selected localities–specific and concentrated defense for specified centers.

ARMY AIR DEFENSE ROLE

ASSUMING that all elements of this continental "team" defense system function as they are intended, an appreciable attrition of enemy forces will have taken place, as a result of prior engagements, by the time the enemy nears the approaches of their targets. However, the Army antiair forces cannot be content with further attrition, but must destroy all enemy weapon carriers which penetrate the outer defense.

Are antiaircraft forces of the Army capable of this terrific task?

Even if the answer to that question–today–were a categorical Yes, it is apparent that such an answer could not hold true for long if the defenses remained static. So the answer can only be indicated through a careful analysis, at the moment, of the existing antiair defense system and the *direction* it has taken–and only in terms of the actual threat today and the *direction* which that threat has taken.

TODAY'S threat is posed by huge, high-performance jet bombers capable of carrying atomic warloads at great speeds and from low to great altitudes.

Today's Army air defense is the Nike guided missile, which has proved itself capable of destroying any type of bomber in use or known to be on the planning boards. Nike has shown that it can go higher, if need be, and can outspeed and outmaneuver any such high-performance bomber.

The Nike's record of success includes missile targets, a fact which

"Missile Master's job will be to show every commander on a radar screen the best target for his Nike defenders to engage."

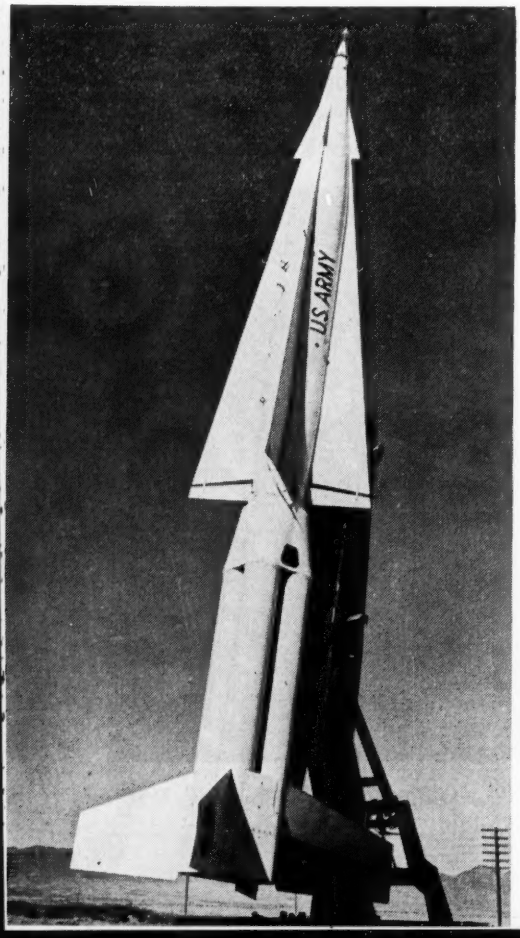
points to its potential as master over unmanned "missile bombers" of the future. The Nike system has demonstrated its worth, as compared with other available weapons. The system, moreover, has been installed in positions favorable for the future employment of advanced members of this growing "family" of supersonic surface-to-air missiles.

Comparison of Nike with other surface-to-air missiles used to accomplish the same mission under similar conditions obviously would be one of the best ways to demonstrate its incredible record. But this cannot be done simply because —nearly four years after the Army put it to use—Nike still stands alone in its field.

To compare this unchallenged champion of the skies with the only other weapons used for the same job—*i.e.*, the rapidly disappearing antiaircraft artillery guns of World War II—would be absurd.

For purposes of showing how requirements for top "grades" in the school of antiaircraft experience have gone up, it might be enlightening to point out that in World War I an average of more than 1000 rounds was fired for every enemy plane destroyed and that, in World War II, reckoning was in hundreds of rounds. Today's Nike-men flunk the test if it takes more than *one round* per target.

The new powerful Nike-Hercules, with capability of carrying an atomic warhead, is larger, faster and more lethal than the Ajax.



EACH Nike battalion is tested every year on its success in practice "shoots" conducted at the Red Canyon Range in New Mexico. They are coming away from these realistic war-rehearsals, in which live warheads are used against drone targets, with "A" marks.

Seattle's 28th Antiaircraft Artillery Missile Battalion, for example, recently brought home a straight-A report card from the special test conducted at Red Canyon which demonstrated Nike's ability to destroy maneuvering low-altitude targets. The 28th chalked up a record-breaking 13-for-14 "kills" against these speedy, radio-controlled target drones.

This was the Nike battalion which last year achieved recogni-

tion as the world's best surface-to-air missile unit by winning top honors in the first competition ever conducted by antiaircraft missile units. Army Air Defense Command battalions were scored against each other on the basis of results in their annual service practices.

Every Nike unit, which is trained as a "package" at Fort Bliss, must fire its weapons successfully before moving out to a defense site. With the annual practices held regularly since 1955 combined with continuing research and development test firing in progress at Fort Bliss for more than a decade, Nike holds the distinction of being the world's most experience-proven guided missile. Nearly 3000 Nike missiles have been fired to date. Nike battalions now guarding American cities have fired the greater part of this total during their training and practice at Red Canyon.

The new Hawk missile thinks for itself as it wings through the air to kill enemy planes that might attempt low altitude approaches.

CONSIDER, for a moment, what the Nike is designed to do. Following radio commands beamed to it by ground-based control equipment, it must zoom at supersonic speed miles from its launching site to reach altitudes triple the "high" altitude which bombers reached in World War II, and finally destroy the fastest jet bombers in a single blast.

Nike-Ajax, the first member of the Nike family, has destroyed every type of target available. These range from older four-engine bombers to the standard target drone smaller than the Nike itself, and include operational jet missiles. For lack of a better challenge by available targets, the Nike has been fired successfully against simulated targets as swift as 1000 miles per hour and higher than bombers can fly.

Although these "targets" are simulated and amount to only a moving point in the sky calculated by ground-based equipment, it is well to remember that the Nike actually is never fired at the target itself, but at a moving point in the sky where, at any given instant, the intercept point is predicted. The point changes with each maneuver of the bomber.

We are now rapidly approaching the time when Nike-Ajax will be joined by a new member of the family, Nike-Hercules. It will be capable of doing to a fleet of enemy bombers what the Nike-Ajax was designed to do to a single craft. Hercules can employ an atomic warhead for use against entire formations of bombers.

The Hercules is larger and faster than the Nike-Ajax and will be able to go higher and at triple the range in order to intercept targets. Improved ground control equipment,

designed to handle both Ajax and Hercules from the same site, will add to the lethality of the Nike system. This system provides a selective arsenal of missiles and different warheads, thus providing the right missile for the right target with just the right type of warhead to serve the need at the moment.

Successful development of the new and amazing low-altitude specialist Hawk adds luster to the already glowing outlook for keeping the Army Air Defense Command's missile defense system well ahead of the threat.

Hawk is a missile which literally thinks for itself by spotting and swooping down upon even the lowest of targets. It already has established a record of reliability which makes it a fitting partner in this business of Army air defense, at home near our cities or on the battlefield.

ANOTHER very important development has come with the advent of Army surface-to-air missiles used for antiair defense of United States. So-called "fixed" antiaircraft emplacements have gained a mobility which conventional antiaircraft artillery guns lacked. No longer is defense limited only to the airspace near the defense sites, but it extends in 360 degrees at intercity ranges. Increasing range of these missiles and deployment of more and more units in defenses relatively near each other make the individual defenses mutually supporting. In some instances, city defenses already are as mutually supporting as once were individual batteries of a single defended area.

This has brought about the need for the Army's Missile Master fire direction system for integrating the fire of all antiaircraft weapons of each defense. Need for coordination of fire is evident when it is understood that Nike batteries defending Washington and Baltimore, for example, operate as a single defense.

The first Missile Master will be

Power potential of a Nike firing unit is demonstrated in this view of a battery poised for action.

in operation by the end of 1957.

Battery commanders won't have time to draw straws to see which unit will engage individual targets which may be part of a formation of incoming supersonic weapons carriers, each capable of levelling a city. Missile Master's job will be to show every commander on a radar screen the "best"–*i.e.*, the most threatening–target available for his Nike defenders to engage. In an instant each battery commander can see which targets already are being engaged by other batteries and which, according to the Standing Operating Procedures, he must destroy. If friendly aircraft are in the area, they are marked on the screen as such.

It goes without saying that this steady flow of target data to individual batteries must be in refined form, which gives each commander full information on every potential target in the local arena.

A metropolis without a Nike missile defense may receive the "fringe benefits" that come from the overlapping effectiveness of two Nike defenses in proximity, because any enemy seeking to bomb the unprotected city would have to bypass or penetrate the covered area between defenses. Here, again, an expanding Nike system is setting up a solid defense wherever several cities in a row are protected.

These factors are of utmost significance as they relate to potential planning for the best use of other air defense weapons, such as fighter interceptors, which will be freed for deployment farther from home, where they will gain more time for engaging attacking bombers. The goal should be to attack the enemy at the maximum effective range of each weapon system and to continue the attack until each enemy intruder is destroyed.

SUCCESS after success with the Nike has brought forth confident predictions that a completely effective air defense of our important cities, industrial complexes, and retaliatory bases can be achieved exclusively with surface-to-air missiles–and at less expense than a combination of different systems.

One hundred percent effectiveness must always be the objective of the Army Air Defense Command, which is moving toward that goal with plans for an all-missile defense system.

Army spokesmen see a successful defender against the "ultimate" weapon of attack, the Intercontinental Ballistic Missile (ICBM). This defender missile itself probably will not be the supreme weapon in its own pantheon. As one missile moves from the drawing boards to testing and later deployment, others follow. Fortunately, units already deployed occupy sites which can be used for defense against the ICBM.

MANNING OUR DEFENSES

THE Nike system lends itself to economical manning by men serving at "home" with units of Army National Guard and Reserve antiaircraft artillery. Already more than one hundred Guard units of the various states with specific defense missions have proved themselves capable members of the existing Army air defense team. They are armed now with conventional guns. However, one unit, the 720th AAA Missile Battalion of the California Army National

Guard, already has converted to the Nike system in a Los Angeles area "pilot test." Ultimately, the program will convert all Army Guard units of the Army Air Defense Command's augmentation force organization to missiles.

The day of the "minuteman" has returned with the prospect of a durable and important future in keeping with the National Guard's long established role. This plan calls for full-time skeleton crews of Nike specialists to keep the defense sites manned and to turn on the Nike sets to warm them up while the remainder of the Nike men are rushing from their civilian occupations to their assigned sites.

SINCE before World War I the American people have relied upon the Army for major contributions to defense of the continental United States. Army artillery forces were given principal responsibility for harbor defenses during the war with Spain in 1898. Seacoast artillery expanded to the point where in 1907 a separate branch of Coast Artillery was established.

The deterrent effect of our established Harbor Defense Artillery became so great that it was never challenged by enemy naval forces. We had, in effect, "shot ourselves out of a job." The Coast Artillery applied itself with equal vigor to its Antiaircraft Artillery role. With the quality of Nike, given the quantity required, we might well shoot ourselves out of this job as well. This would be a signal professional accomplishment.

TRADITIONALLY, ever since antiaircraft artillery units of the U. S. Army were employed during World War I in France, antiaircraft artillery has performed a dual role, providing protective cover for our forces on the battlefield and standing guard over vital "fixed" installations essential to the overall success of operations.

The advent of the atomic bomb has made adequate antiair defenses of crucial areas on, and away from, the battlefield vital to the conduct of successful operations. In World War II under conventional warfare conditions, antiaircraft artillery fire helped to secure and protect the otherwise untenable beachheads at Salerno, Anzio, and Omaha Beach and still later the important Allied supply area at Antwerp. Again at Remagen the antiaircraft artillery assisted in holding the surprise foothold over the Rhine. In addition to successful defense against air attack, ground fire from AA weapons was effective in turning back attempts of the Germans to wreck the span and stop the onrush of Allied forces into Germany.

At the onset of World War II, when it first appeared that American cities might be bombarded, reliance was again placed upon antiaircraft artillery units of the Army. The continental defense established shortly after Pearl Harbor was largely antiaircraft artillery. Fortunately, American cities were spared from aerial attacks.

Rising tension in international affairs during the "cold war" of the late 40's brought about another expansion of antiaircraft artillery in the U. S. Army.

THE present Army Air Defense Command, then named the Army Antiaircraft Command, was estab-

lished in July 1950 just a few days after the outbreak of the Korean conflict, and was given the responsibility for planning operations of an overall Army command. Full command was assumed by ARADCOM in April 1951. (See "Sentry of the Skies," March 1956 DIGEST.)

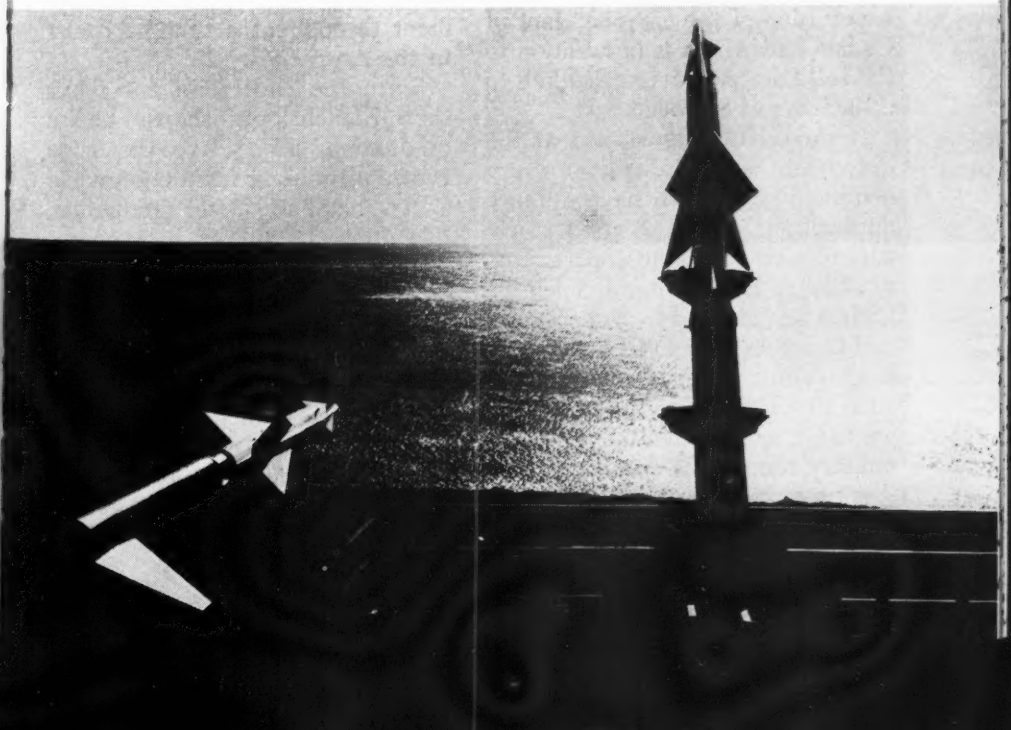
At first, units of the command used the conventional guns of World War II, with improved fire direction systems. Later they were given the 75mm Skysweeper gun, a fully automatic weapon effective against low altitude targets.

These, of course, were interim weapons for the waiting period, as the long-tested Nike system was being perfected for troop use. Then the Nike was given to Army troops late in 1953 for deployment to the Nation's critical areas. There has been no marking time since the era of Nike missiles began. Tremendous expansion in just these few years has established an unequaled Army missile defense system which has pioneered in the guided missile field.

IN THIS atomic age no nation can survive to fight a global war unless it protects itself from the rain of enemy atomic bombs. Likewise, no Army can move on the battlefield unless it defends itself from aircraft, or missile-borne atomics.

We have the Army weapons and the know-how, the Army tradition and the men, the Army experience and the organization, the motivation and esprit, to repel this devastating threat. Nike, the Greek Goddess of Victory, was a well-chosen namesake.

From coast to coast, Army antiair units are poised, ready to meet any threat of attack from the air.



A well-disciplined, soldierly product is assured by an intensive program of

MILITARY TRAINING AT WEST POINT

Major George E. Wear

THE entire curriculum at the United States Military Academy —academic and military training alike—is designed to accomplish the overall mission of preparing the cadet for a lifetime career in the Army. A previous article dealt with the purely academic aspects. (See "Academic Trends at West Point," April 1957 DIGEST.) Accordingly, this coverage is concerned with that portion of the military training program conducted under supervision of the Commandant of Cadets and which is in addition to the full four-year course leading to a Bachelor of Science degree.

It should be emphasized at the outset that certain aspects of every course of instruction have military application. This is particularly true of such academic departments as Military History, Social Sciences, Ordnance, Military Topography and Graphics, and Military Art and Engineering. In addition, the four-year physical education program, while not actually considered to be military training, is specifically designed to prepare the cadet physically to be a leader.

SIMPLY STATED, the military training program at West Point is designed to familiarize the cadets with the basic principles of tactics and the materiel, roles and techniques of the various arms and services. A broad-brush treatment is employed in order to give the graduate the necessary military foundation for continued development throughout a lifetime career in the Army.

Since the cadets do not select their branch until shortly before graduation, all receive the same course of military instruction while at the Academy. After graduation, they attend the officers basic course at their appropriate branch school where they receive detailed instruction in branch subjects.

Military training is concentrated during two months each summer. This is because the heavy academic schedule, running from September through May, allows only two one-hour periods per week to be allotted to military subjects.

MAJOR GEORGE E. WEAR, Infantry, is S-3, United States Corps of Cadets.

tensive schedule, he must constantly move "at the double." He is taught to accept authority, to obey orders of superiors instantly and unhesitantly, and to abide by the strict duty and honor concepts which are the basis of the West Point system.

Details of First Classman (Seniors) are in charge of every phase of this instruction. From reveille until taps, they act in the capacity of instructor, disciplinarian, father confessor, drill master, counselor.

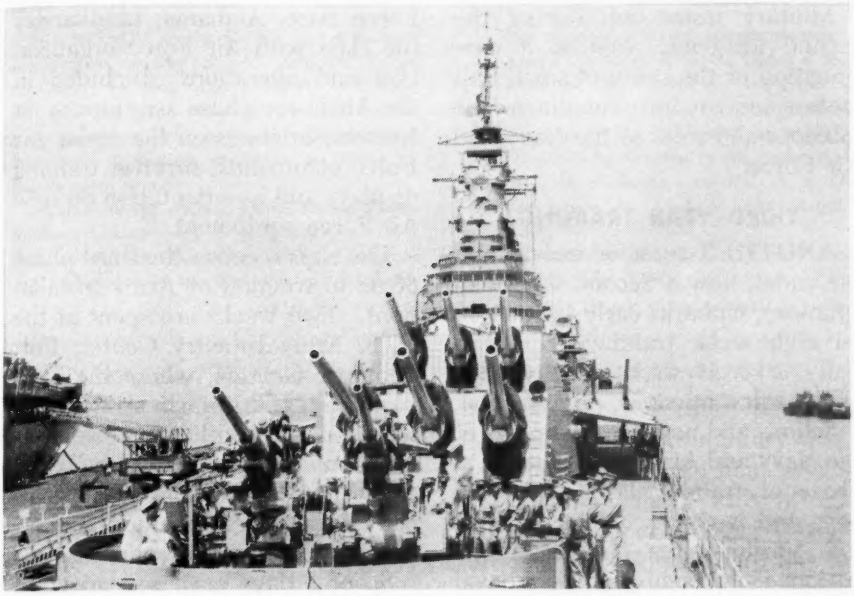
The new "Plebe" finds himself completing New Cadet Barracks with a sharpened insight into the military life and the West Point system. He has learned to stand up straight, wear the cadet uniform properly, execute the basic drill and manual of arms evolutions flawlessly, and to answer "Yes, Sir" and "No, Sir" without adding extraneous excuses or details.

Although he has received 8½ hours sleep each night and eaten three well-balanced meals each day, he has lost all excess weight during the two months and has been transformed from a relaxed teen-ager to a neat soldier with a proper military bearing.

Early in September he is presented to his regular company at a presentation review. He soon finds that all the upperclassman in his company will continue to enforce the "Plebe" system for another nine months.

During the first academic year, his military training consists of introductory instruction in Infantry, Artillery, Armor, Signal Corps, Corps of Engineers and basic individual weapons as well as a short course in Social Conduct and Military Courtesy.

A "Yearling" (sophomore) qualifies with the M1 rifle on the known distance range at nearby Camp Buckner, the summer training area.



During the Navy phase of their summer training trip, Second Classmen (juniors) tour the USS Newport News.

SECOND YEAR TRAINING

FOLLOWING "Plebe" year and a month's leave in June, the new "Yearling" (Sophomore) returns to Camp Buckner, the summer training camp on the West Point reservation. Here he receives his first real military training in the field.

Located about seven miles from West Point, Buckner is a cantonment type camp built around a beautiful lake. Available firing ranges and training areas are somewhat limited due to the rugged nature of the terrain but by careful scheduling and close control, the facilities are adequate.

During two months at camp the cadets are in the field about seven hours a day, firing on the ranges and participating in small unit tactical problems. They receive a complete record firing course with the M-1 rifle. In recent years about one quarter of each class qualified as Expert Riflemen. They also fire or observe the firing of all other standard infantry weapons found in a Regimental Combat Team.

In addition, the cadets participate in basic squad, platoon and company attack and defense problems as well as basic armor and field artillery training. Combat support instruction is presented by the Corps of Engineers, Signal Corps, Quartermaster Corps, Chemical Corps and Military Police.

This summer field training provides a welcome change of pace for the cadets after the long and difficult "Plebe" year. After acquiring the "feel" of military life as they will find it after graduation, they return to the cadet barracks at the end of August with their professional outlook broadened.

Military instruction during the second academic year is a continuation of the study of small unit tactics and an introduction to the missions and roles of the Navy and Air Force.

THIRD YEAR TRAINING

ANOTHER summer arrives and the cadet, now a Second Classman (Junior), embarks early in June on an eight-week training trip. Initially he receives a basic knowledge of the roles, missions, organization, functions and new developments of the Navy and Air Force. The naval phase of training lasts about ten days and is conducted in the Norfolk, Virginia, area. The class tours various naval combat ships, a naval air station and is instructed in amphibious warfare.

A week's stay at Maxwell Air Force Base, Alabama, familiarizes the class with Air Force organization and operations. Included in the Air Force phase are rides in jet trainers, briefings on the major Air Force commands, survival training displays and an orientation on new Air Force equipment.

The class receives the third phase of its instruction at Army installations. Two weeks are spent at the U. S. Army Infantry Center, Fort Benning, Georgia, where the class participates in practical field instruction and applicatory exercises of the Army Combined Arms Team, primarily on the platoon and company level. Also included are airborne and ranger orientations.

Several days each are spent at the Army Aviation Center, Fort Rucker, Alabama; the Engineer Center, Fort Belvoir, Virginia; Sig-

A First Classman (senior) serves as instructor at Fort Dix, New Jersey, where he has been assigned for summer training.

THE MISSION of the United States Military Academy is to instruct and train the Corps of Cadets so that each graduate will have the qualities and attributes essential to his progressive and continued development throughout a lifetime career as an officer of the Regular Army.

Inherent in the mission of the United States Military Academy are the objectives:

1. Mental—To provide a broad collegiate education in the arts and sciences leading to a bachelor of science degree.
2. Moral—To develop in the cadet a high sense of duty and the attributes of character, discipline, and motivation essential to the profession of arms.
3. Physical—To develop in the cadet those physical attributes essential to a lifetime career as an officer of the Regular Army.
4. Military—To provide a broad basic military education.

From the 1957-58 Catalogue of the United States Military Academy.

nal Center, Fort Monmouth, New Jersey; Transportation Corps Center, Fort Eustis, Virginia; and Quartermaster Corps Center, Fort Lee, Virginia, where the combat support roles and techniques of various branches are presented.

During the third academic year, the cadet again receives classroom type military instruction in the form of map problems emphasizing the tactical employment of infantry, artillery and armor units. Highlight of his military instruction during this year is a 36-hour Military Instructor Training Course in which the cadet is taught how to present military type instruction. He prepares and presents several lessons of varying types, on which he is graded by the instructor and critiqued by his classmates.

FOURTH YEAR TRAINING

PERHAPS the most beneficial phase of the cadet's military training comes during the final year at West Point. They visit Wright Air Development Center, Wright-Patterson Air Force Base; the Artillery and Missile Center, Fort Sill, Oklahoma; the U. S. Army Air Defense Center, Fort Bliss, Texas; and the Armored Center, Fort Knox, Kentucky. This two-week trip provides an up-to-the-minute orientation on some of the future branch or service choices of the cadets.

Upon return to West Point, the cadets spend a week preparing for summer command assignments. Individuals may be assigned with the new "Plebe" class, the new "Yearling" class at Camp Buckner, or

Selecting Competitive Appointees

THE United States Military Academy recently announced a new three-point method to be used in selection of competitive appointees to the Academy. The new system, which applies to those entering West Point next July, will affect about 15 percent of each class annually—about 100 vacancies. Under the new method competitive appointees will be chosen on the basis of mental abilities, physical aptitude and leadership potential. Previously only scores attained on the College Entrance Examination Board mental tests have been used to establish the order of merit for entrance.

Both the CEEB mental test and the West Point Physical Aptitude Test will be administered to nominees next March at selected military installations in United States and overseas. In addition, each nominee's scholastic standing and leadership potential will be considered. Competitive nominees include young men named by the President, those from Regular and Reserve components of the Army and Air Force, sons of deceased veterans, and graduates of honor military and naval schools.

with Army trainees at the Army Training Center, Fort Dix, New Jersey.

Here, in the process of exercising command responsibilities or presenting instruction, the cadets are given their first real chance to function as leaders. They show marked improvement in acceptance of responsibility and ability to get a job done.

With the start of the academic year, the First Class (Seniors) assumes the responsibilities of "running" the Corps. The many cadet officer positions are filled by this class, which helps further their practical leadership training. Formal classroom military instruction includes the duties and responsibilities of junior officers, organization and operations of the combined arms team emphasizing the pentomic concept, and career opportunities in the Air Force and various branches of the Army.

The First Class also receives a 51-hour course in leadership during the final year, including instruction in Military Management, Personnel Management and Principles of Leadership. The course consists mainly of practical work in solving actual leadership problems that have confronted small unit commanders in the services. Principles of leadership applicable to junior officers are emphasized.

SHORTLY before graduation the cadets choose between a career in the Army or Air Force.* Those selecting the Army also choose one of the combat arms as their basic branch.

As these well-disciplined, confident young men depart West Point wearing new second lieutenant bars, they are not yet full-fledged experts in any particular field but they possess the best possible qualifications with which to start their careers as officers—a well-rounded educational background and the deep desire to serve their Nation in the spirit of the motto, "Duty, Honor, Country."

* By Department of Defense directive, twenty-five percent of each graduating class of the U. S. Military Academy (through 1958) is authorized to be commissioned in the Air Force on a voluntary basis.

ASSOCIATION OF THE UNITED STATES ARMY—ANNUAL MEETING

THE ANNUAL MEETING of the Association of the United States Army in Washington, D. C., 28-29-30 October provides an opportunity to review current plans, programs and progress in national defense. The meeting features a forum on military affairs with top Army leaders, and displays of Army weapons and equipment.

Registration of more than 2,000 members and guests is expected. Speakers include Secretary of the Army Wilber M. Brucker, Army Chief of Staff General Maxwell D. Taylor, and other military and civilian leaders.

Industrial exhibits will be on display at the Sheraton Park Hotel, while some 25 acres of military exhibits will be shown at Fort Myer, Virginia. The military exhibition, open to the public, continues through 3 November.

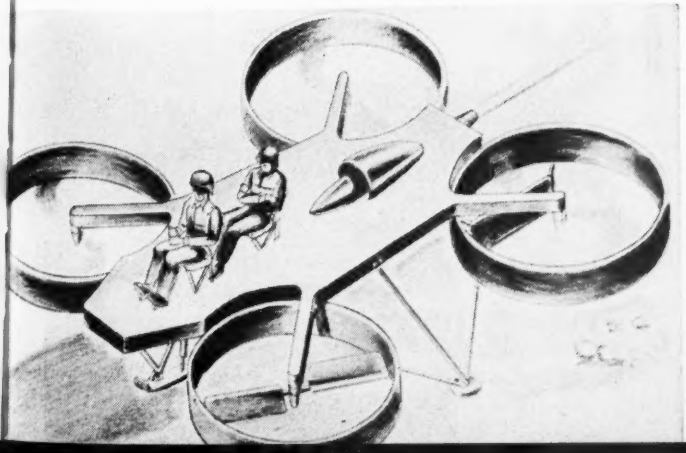
In addition to its annual meeting and monthly publication of "Army" magazine, the principal activities of the Association include press information and public relations; forums and panel discussions; dissemination of information to business and industry; programs for advancement of Army esprit de corps; publishing of military books; and establishment of regional organizations of Army supporters to assist local commanders.

This Versatile Army

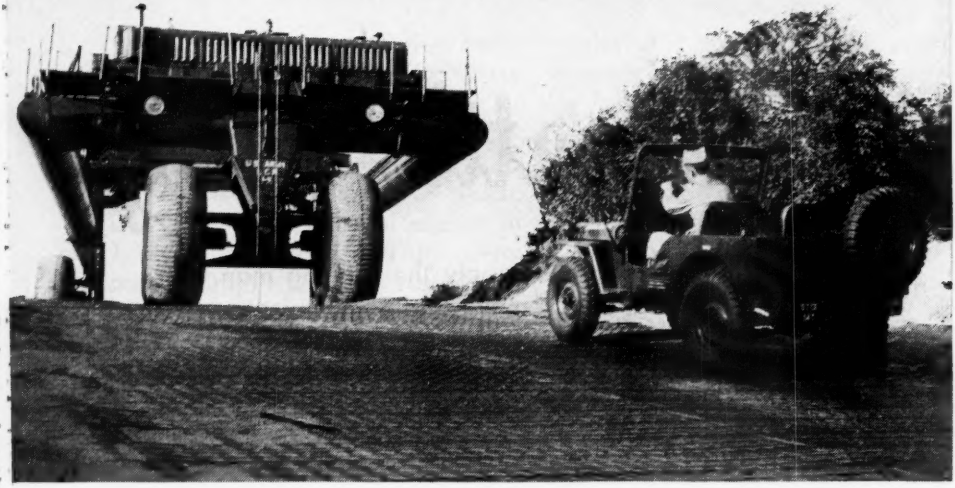
IN THE continuing effort to supply the fighting man with everything he needs to shoot, move and communicate more effectively, the U. S. Army engages in activities ranging from basic scientific research to designing and building new field equipment. On these pages are some recent pictures that demonstrate the versatility of today's Army.

AVIATION RESEARCH

Studies now are being made of lift and flight characteristics of a "Quadrotor" type helicopter to determine possible future Army use.



Artist's concept of a flying test bed version of an Aerial Jeep would provide a general utility vehicle freed from land restrictions.



Designed to refloat landing craft, the 101-ton, 75-foot-long Landing Craft Retriever dwarfs a jeep as it goes through its paces.

MOBILITY

A helicopter delivers a 3,100-pound assembled float in Army Engineer studies of improved methods of moving river-crossing equipment.

Expected to prove its worth in radioactivated and combat zones, this "robot" tractor which can be operated by remote radio control, is currently being tested.

TECHNICAL DEVELOPMENTS

An experimental auger designed to dig holes up to six feet in diameter and 22 feet deep at half a foot a minute, is being tested by Army Engineers.

In the sub-zero cold of a climatic test chamber, engineers check the efficiency of a generator designed to provide power for guided missiles.

Nuclear power plants for field use are expected to result from studies made at the Army Package Power Reactor, Fort Belvoir, Virginia.

SCIENTIFIC RESEARCH

World Spanner—the world's mightiest long-range radio transmitter—contrasts with a tiny helmet field radio, both developed by the Signal Corps.

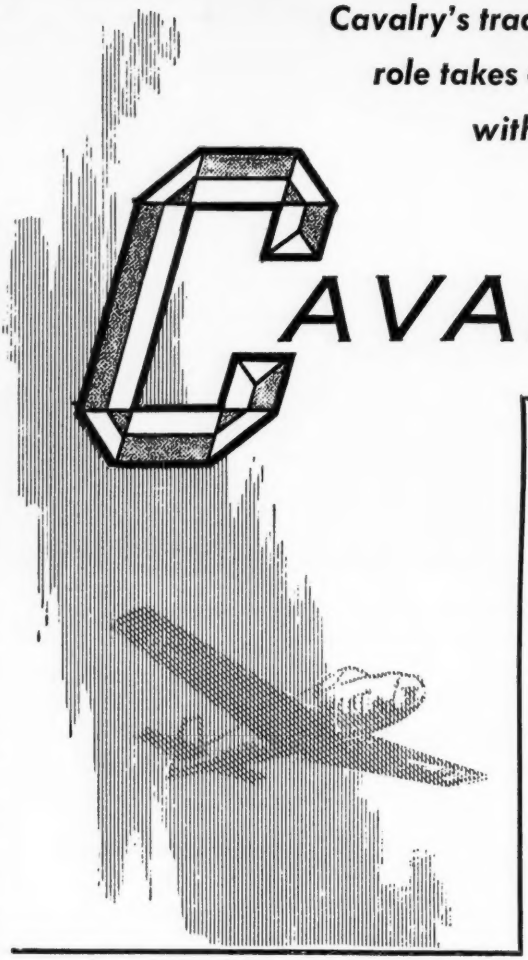
During a field problem in Germany, two soldiers set up a 57mm recoilless rifle to overlook "attacking" forces in the valley below.

IN THE FIELD

An artillery rocket battalion prepares an Honest John ground-to-ground rocket for firing during a field demonstration in Italy.

Cavalry's traditional reconnaissance role takes on a new dimension with the advent of

CAVALRY O



Lieutenant Colonel Colli

WOVEN into the fabric of America's history, the term "cavalry" connotes a proud, timeless, unchanging tradition, embracing the spirit and courage of past generations of mounted troopers.

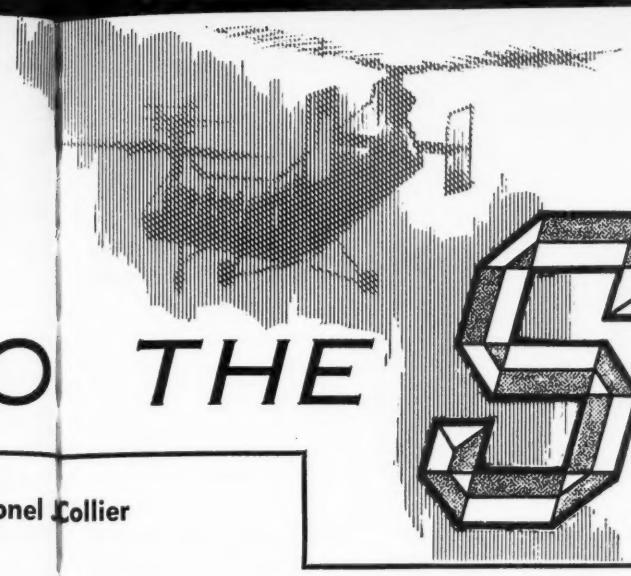
Actually, cavalry is far from a fixed method of combat or a frozen pattern of organizational and doctrinal concepts. It is instead an art of constant change and continuous adaptation reflecting the march of technology and the evolution of war itself. By experimentation, by ordered development, cavalry has progressively raised its capabilities and increased its mobility.

Through these processes, cold steel gave way to fire power; automatic weapons became the principal arms; animal transport was replaced by powered vehicles; hand signals and voice commands were supplanted by electronics. The search for improved means for carrying out the cavalry missions never ceases.

Currently this search has turned to the concept of "sky cavalry."

Essentially sky cavalry, as now conceived, envisions the marriage of aerial reconnaissance with ground reconnaissance elements in a single team amply equipped with electronic and photographic surveillance devices for use both in the air and on the ground. It joins fixed and rotary wing aircraft with tanks, jeeps and armored personnel carriers in a unit organized and equipped for performing cavalry missions.

LIEUTENANT COLONEL JOHN T. COLLIER, USAR, is a mobilization designee assigned to Information Section, Headquarters, U. S. Continental Army Command, Fort Monroe, Virginia.



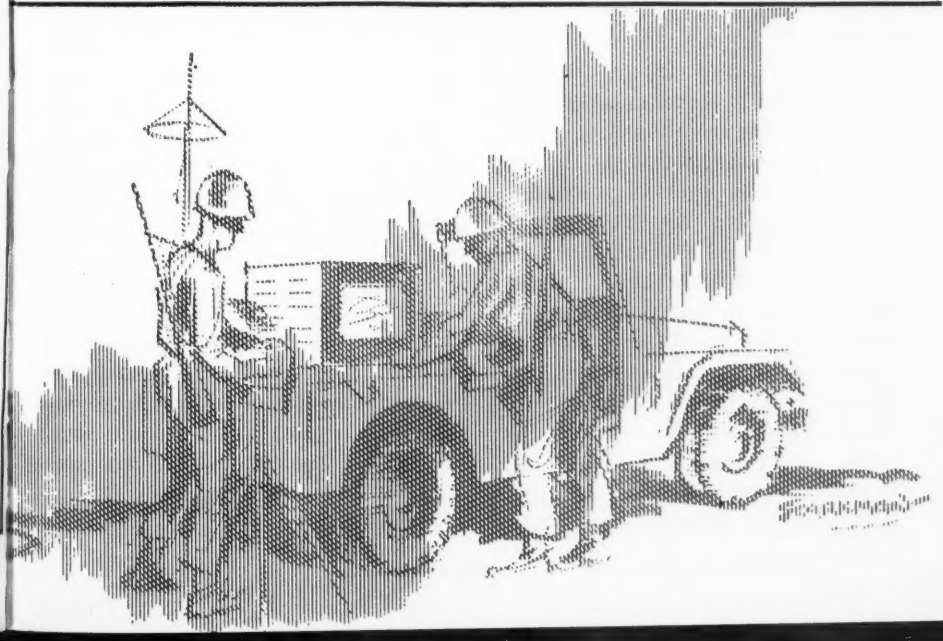
TO THE SKY

onel Collier

The intended purpose of sky cavalry can be simply stated—namely, to improve the reconnaissance capabilities of armored cavalry on the ground. Still in the experimental stage, the form in which sky cavalry now is being tested involves unification of air-ground command at the lowest feasible echelon. It is being studied in the quest for a more favorable mobility differential and greater reconnaissance capacity for division, corps and army reconnaissance elements.

CONDITIONS prevailing on atomic battlefields of the future would increase requirements for armored cavalry missions, and would impose heavy demands on units carrying out such missions. Surveillance would have to be provided over much wider fronts and more extended depths than in the past.

The vastly greater ranges of



Where formerly horses brought fighting men to quick concentration, the helicopter serves today.

modern artillery weapons pose critical problems involving acquisition of targets for these weapons and assessment of damage inflicted by them. Armored cavalry units must be prepared to deal with these problems. Additional demands would be placed on such units by the greater requirements for security and combat liaison between fast moving, widely dispersed forces.

The sky cavalry concept takes these factors into account. Pending further testing of sky cavalry, the new pentomic infantry division, the armored division and the reorganized airborne division are provided with organic Army aviation that is specifically designed to work with ground reconnaissance elements. The aviation company, under division control, is the unit which assists ground reconnaissance elements by teaming aircraft with armor and infantry units.

In both armored and infantry divisions, an armored cavalry battalion is the principal reconnaissance element. This unit works closely with the division's aviation company. Tactical mobility derived from its tank units and mounted reconnaissance elements, plus support provided by its organic armored infantry and heavy weapons units, make this battalion well suited for cavalry missions. The battalion provides security, serves as a covering force and fights in "economy of force missions" when application of major force is not necessary. Less commonly, it may constitute reserve forces.

In carrying out these and other missions, the armored cavalry battalion normally will have aviation elements, either attached to it or placed in direct support. The aviation company's supporting aircraft augment the battalion's surveillance, reconnaissance, liaison, and communications roles from the air. The company's aviation platoon furnishes the aircraft for battlefield movement of the battalion's infantry patrols when such airlift is required. By these means, sky cavalry type jobs are already being performed by air elements provided by the parent division.

DESIGNATED as SkyCav I, the first test of the idea of teaming aviation and ground reconnaissance elements in the same unit was conducted as part of Exercise Sage Brush, a joint Army-Air Force maneuver held in Louisiana during November-December 1955. An ex-

"The aviation platoon furnishes the aircraft for battlefield movement of the battalion's infantry patrols."

perimental sky cavalry company, containing both aviation and ground reconnaissance elements, was organized by the XVIII Airborne Corps at Fort Bragg, North Carolina, and subsequently was tested as a unit of the 82d Airborne Division. SkyCav I proved the feasibility of integrating aviation with ground elements, but indicated that further study and testing were needed to perfect a suitable organizational structure.

Next came Exercise Jump Light, in which the 101st Airborne Division tested proposals for changing airborne division organization. In this exercise, held at Fort Bragg, North Carolina, and at Fort Campbell, Kentucky, between October 1956 and January 1957, an aviation platoon was organic to the reconnaissance troop. Results of the exercise are still being evaluated, but there were further gains in crystallizing sky cavalry concepts.

Logically, the next step was to test sky cavalry with armor. Following evaluation of SkyCav I, General W. G. Wyman, Commanding General, U. S. Continental Army Command, issued instructions covering organization of a new sky cavalry company and further testing and evaluation of the concept. Early this year, under a tentative TOE provided by CONARC, the Fourth U. S. Army organized such a company for test in a project designated as SkyCav II. The testing of sky cavalry organization and doctrine is a responsibility of CONARC, which guides combat development for the Army.

Purpose of this project, like that of SkyCav I, was to improve the reconnaissance capabilities of the division by combining ground reconnaissance, aerial reconnaissance and transport into one unit with the latest electronic and photographic surveillance devices being utilized to expand the reconnaissance capability of the division to secure greater, faster and more complete coverage both from the air and on the ground.

IN SkyCav II, the 1st Armored Division was the test unit. The provisional sky cavalry company, having an organic aviation element, replaced one of the reconnaissance companies of the battalion. Thus with an organic sky cavalry company, the armored cavalry battalion should be able to meet more fully the division's reconnaissance requirements and to increase its

"Sky cavalry envisions the marriage of aerial reconnaissance with ground elements in a single team, amply equipped . . ."

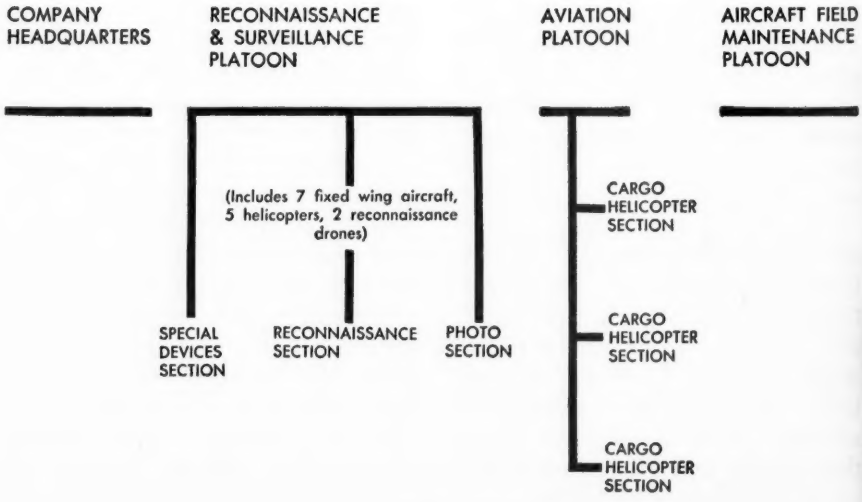
capabilities in *all* armored cavalry missions.

SkyCav II was a part of Exercise Sledge Hammer, conducted by Fourth U. S. Army in the Louisiana maneuver area last spring. A provisional sky cavalry company was organized for test purposes. *(See chart.)*

While aviation units in the sky cavalry company afford important additional means for the armored battalion cavalry commander to carry out his missions, they bring to the battalion heavy burdens for maintenance and supply. These burdens are especially significant in view of the high degree of self-sufficiency with which armored cavalry units must operate. Current tests and evaluation will throw further light on the problems of control and support which sky cavalry will impose on the battalion.

SKYCAV II not only was a test of the proposed sky cavalry company organization but was of sufficiently broad scope to cover the concept for a new type of division reconnaissance battalion incorporating the latest electronic and

SKY CAVALRY COMPANY



photographic surveillance devices along with aerial reconnaissance and transport capabilities.

Before the sky cavalry concept is reflected in changes in armored cavalry organization and doctrine, specific answers must be obtained to a number of significant questions:

- Are the capabilities of the armored cavalry battalion actually improved by replacing a reconnaissance company with a sky cavalry company?
- Can a SkyCav company be made an organic part of a ground reconnaissance battalion to improve materially the mobility and flexibility of the ground unit and the speed and accuracy of its intelligence collecting and reporting?
- Can electronic and photographic surveillance devices—including infra-red, radar, and television—be integrated effectively and used efficiently in a sky cavalry company?
- Should a unit with the capabilities of sky cavalry be employed at the corps or army level?
- Do the advantages of incorporating Army aviation in ground reconnaissance units override the difficulties which are imposed on such units by the operation, control, maintenance, and supply of several types of aircraft?

REGARDLESS of the final answers, the indispensability of Army aviation in ground reconnaissance is firmly established. Decisions to be made with respect to sky cavalry will determine whether aviation units will function as organic elements of reconnaissance units, or will in all cases be attached or placed in support of such forces by higher headquarters.

If the former concept is adopted, there still will be many situations in which aviation elements will work closely with ground units which do not have aircraft of their

"It joins fixed and rotary wing aircraft with tanks, jeeps and armored personnel carriers . . . performing cavalry missions."

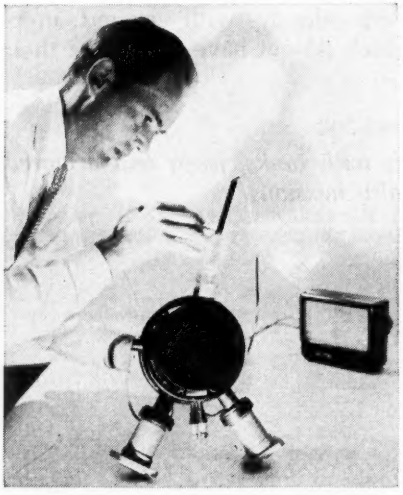
own. In either case, Army aircraft will play a larger role in armored cavalry missions.

Beyond the crystallizing concept of sky cavalry are further experiments looking to the capabilities of Army Aviation in other traditional cavalry roles. At the U. S. Armor Center and elsewhere, Army aircraft have been demonstrating their capability as "air cavalry" in support of ground forces.

Neither sky cavalry nor other more visionary types of employment of Army Aviation in cavalry roles would obviate the need for tactical air support provided by the Air Force. Air strikes against appropriate targets designated by ground commanders would be made by the Air Force as at present, and Army reconnaissance capabilities in the combat zone will continue to be supplemented by tactical air reconnaissance support missions. Simplified procedures for joint air-ground operations now being developed by USCONARC and the Tactical Air Command, USAF, will result in more effective support operations of this nature.

By teaming the airplane with the tank, the jeep, and the armored personnel carrier under a single commander with a common system of control, armored units may be on the threshold of still greater capabilities in the fulfillment of the traditional cavalry missions.

Improved Radar Electron Tube



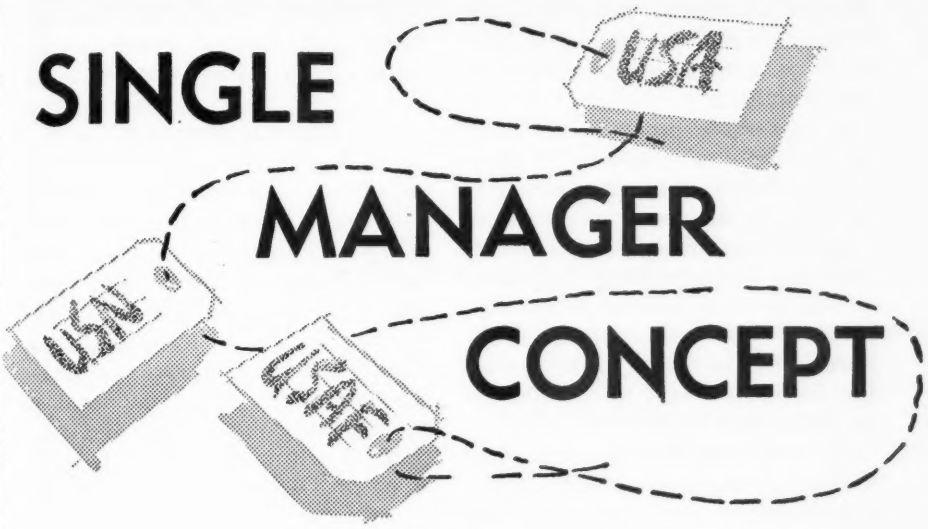
LIGHTER, more compact and versatile radar sets are possible through development by the Signal Engineering Laboratories of a new electron tube. Built by the Raytheon Manufacturing Company, Waltham, Massachusetts, the tube was designed to increase the power in the Nation's vital radar defense networks.

Known as an amplitron, the tube works on the same principles as the ordinary TV and radio tube, but its unique design makes it twice as efficient as previous units. Besides being capable of boosting the energy output of a radar's basic signal from 8 to 14 times, it responds to a wide range of signals, making possible rapid tuning to evade jamming or interference. It can handle a power load equal to that needed to light a small community.

Weighing only ten pounds, the tube's advanced features will allow lighter radars for airliners, long-range storm spotters, electronic ovens, better guided missile systems, more dependable gun-radars for jets, and sharper warning devices. It can also perform a secondary function of generating basic radar waves.

In striving for improved logistic support at lower cost, the military services expect material savings from the

SINGLE MANAGER CONCEPT



Colonel H. P. Houser, Jr.

IN THE continuing effort to provide more efficient services at lower costs, the Single Manager Plan is the latest concept which offers promise of significant gains in the area of logistics. This new concept is being extended not only to Army phases of management but to the other Armed Services also.

At present, as with any innovation that may break with tradition, the plan is subject to a certain amount of misunderstanding which will be resolved when more fully and properly explained. The Army Staff is quite confident that the Single Manager Plan is an effective instrument, and that it will effect savings when fully extended and implemented.

Briefly, the concept calls for assigning wholesale supply responsibility to one military service for itself and the other two services, within an organizational structure that is adaptable to effective management. Under this process the Secretary of one military department is designated by the Secretary of Defense as responsible for performance of all supply management functions related to a specified commodity or service, for all of the Armed Forces. This responsibility encompasses the entire supply field, including cataloging, standardization, requirements determination, procurement, production, inspection, storage, distribution, transportation, maintenance.

TO understand the Single Manager concept, it is first necessary to explain the existing supply system. Each service has its separate supply system which it has developed with changes over the years. In-

COLONEL H. P. HOUSER, JR., General Staff, is Chief, Storage and Distribution Division, Office of the Deputy Chief of Staff for Logistics, Department of the Army.

dividually, each service computes its own contracts, stores what is purchased, then issues the supplies to its own consuming installations and activities.

Considerable progress has been achieved in the endeavor to make the existing system more efficient. Already, it has been modified by single service procurement, cross-servicing, interservicing, interservice supply support and other management changes that have allowed one service to perform certain basic functions for another or all the Armed Forces.

All such modifications have depended to a large extent on the predominant service charged with administration of a particular area, region, post or activity. The Single Manager Plan, however, is not limited to the extent of the present modifications of the basic supply systems. Rather, it encompasses the entire supply field.

EVER since early 1955, active research and review has been carried out in the Office of the Assistant Secretary of Defense (Supply and Logistics), with representatives from all of the offices within OSD, such as Requirements, Procurement, Storage, Distribution, Transportation, Cataloging, Standardization, and Inspection serving on the working group.

Out of these studies emerged the Single Manager Plan. A steering committee with representatives from the military departments was appointed to assist OSD in working out the details and in preparing directives on the assignments. During this period a suggestion also was made to the Secretary of Defense on a proposal to establish a central Military Traffic Management Agency responsible for all continental United States traffic management. This was the first service-type function to be considered under the concept.

On 19 December 1955 the work of the Transportation steering group was presented to the joint Secretaries and a firm plan outlined. It became apparent that the designation of single manager assignments would be made on a standard organizational pattern—whether for supply functions or service functions—so that the relationship within the entire Department of Defense structure would be uniform.

By the end of January 1956, a master directive governing the policies for implementation of single manager assignments was approved by Secretary of Defense Charles E. Wilson, and notice of intent to make specific assignments was announced.

IN THIS initial round, the Secretary of the Army was assigned as the Single Manager for Subsistence, Clothing-Textiles, and Traffic Management. At the same time, the Secretary of the Navy was designated for Medical and Dental Supplies, for Petroleum Products, and for the Military Sea Transportation Service. The Air Force was assigned management responsibilities for Photographic Supplies and Military Air Transport Service.

The Single Manager Plan assigns authority and responsibility to reasonably manageable and identifiable areas. At the same time it permits decentralization of operations to satisfy joint requirements.

Attention has been particularly directed to supply of common-use items because that has been one of the subjects of most extensive investigation and comment.

From all of this it may be seen that whereas under the old system each Department performed functions independently, the majority of functions are performed by the Single Manager for all military services. Each Service still computes its own requirements but the Single Manager collates them and determines the net procurement requirement. (*See Chart I.*)

The Single Manager enters into procurement and performs all contract administration for centrally procured items. He also designates those items to be procured locally. The individual service administers local procurement contracts, and finances such procurement from its own retail stock fund.

UNDER the Single Manager System, there are two stock funds or divisions for each single manager commodity assignment. The single manager stock fund (division) is a division of the service stock fund established to finance single manager or wholesale stocks. The retail stock fund (divisions) or category is established within each of the military departmental stock funds to finance retail stocks. There is a separate retail stock fund division or category for each commodity assignment.

Upon designation as a Single Manager, the Secretary of a Military Department makes appropriate organizational arrangements for carrying out his responsibility through an operating agency headed by an Executive Director (*See Chart II.*) The Executive Director is responsible to the Single Manager through channels prescribed by the Single Manager.

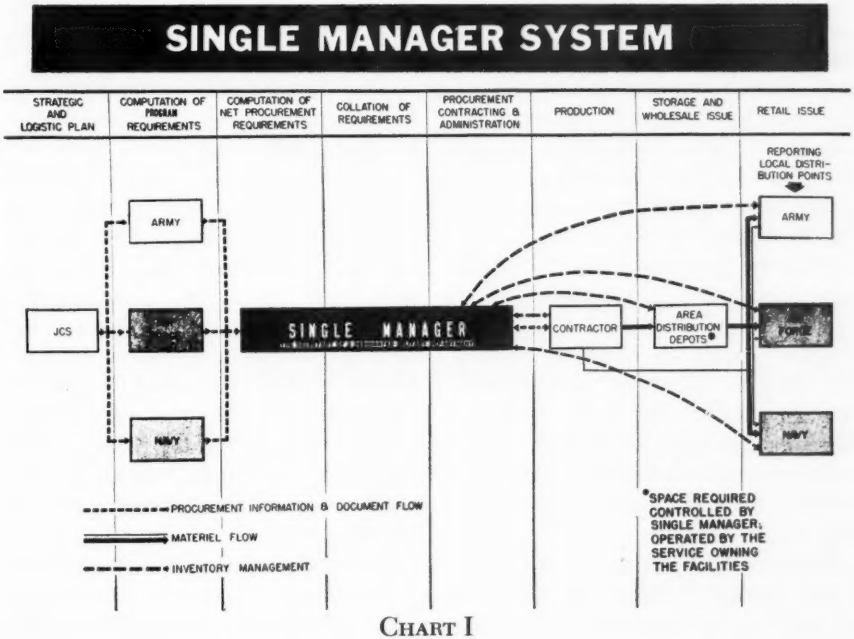


CHART I

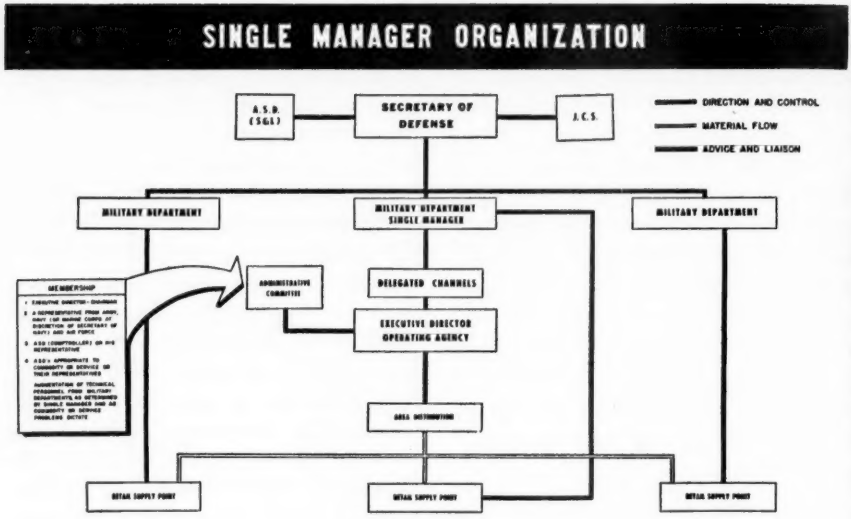


CHART II

There is established an Administrative Committee, composed of a chairman (the Executive Director) and representatives from each military service, the office of the Assistant Secretaries of Defense (Supply and Logistics and the Comptroller) and technical and professional personnel augmentations from the military services as the Single Manager determines necessary. The committee assists the Director in identifying and overcoming problems concerning the operation.

Military personnel on the staff come from all of the military services; civilian staff members are supplied by the department having the Single Manager assignment. Positions within the staff are identified as military or civilian. Key military positions will be subject to rotation on a periodic basis among the various services.

Storage and issue of all centrally procured items are effected by the Single Manager. The currently established distribution depot structure of one of the military services may be utilized, depending upon whether it is in the best location to serve a given area. Material may flow from the contractor directly to the retail or consuming level without passing through these wholesale distribution depots.

The depots in turn may belong to any service, and distribute stocks to the retail level of all services. As an example, the Department of the Army now is using Army depots for initial distribution of subsistence. If studies reveal that, in particular areas, the job can be more economically performed by installations of another service, that service will be requested to provide space and perform the distribution mission in that area. From such distribution depots, stocks are issued to consuming installations of all services.

In addition to the functions outlined in Chart I, the Single Manager also has other areas of re-

sponsibility. These include inspection, quality control and standardization within his commodity field, coordination and direction of mobilization planning, establishing and maintaining central control over inventories owned by him (however, he has no inventory control over stocks at the retail level), and responsibility for cataloging operations within his commodity assignment.

The Single Manager may recommend research and development in specific fields within his responsibility, but each service will continue to conduct its own special research and development. The Single Manager is to be kept informed of such activity in his commodity area.

Although the system now is applicable only within the continental United States, the assigned Single Managers have been requested by the Department of Defense to submit plans and recommendations regarding extension of the plan overseas.

The Single Manager Plan is not a finished product, and further refining is indicated. In concept, however, it is sound, and it is considered that it will prove a valuable device for integrating the logistic operations of all of the military departments at considerable savings to the taxpayers.

CURRENT STATUS OF SINGLE MANAGER ASSIGNMENTS

(AS OF 1 SEPTEMBER 1957)

SUBSISTENCE: The Military Subsistence Supply Agency was established effective 1 July 1956. Implementing procedures were approved by OSD on 6 October 1956 for procurement and issue of subsistence to all military services.

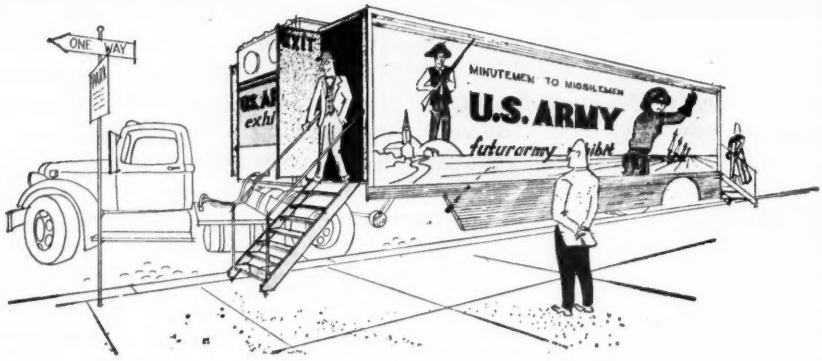
CLOTHING AND TEXTILES: The Military Clothing and Textile Supply Agency was established effective 1 July 1956. Implementing procedures were approved by OSD on 8 November 1956. Procurement for the military services commenced on 1 January 1957. This assignment became fully operational on 1 July 1957.

MEDICAL MATERIEL: The Military Medical Supply Agency was established effective 1 January 1957. Implementing procedures were approved by OSD in November 1956. Procurement for the military services commenced on 1 January 1957. This assignment became fully operational on 1 July 1957.

TRAFFIC MANAGEMENT: The Military Traffic Management Agency was established effective 1 July 1956. This assignment became fully operational on 1 July 1957.

PETROLEUM: The Military Petroleum Supply Agency was established effective 7 January 1957. Implementing procedures were approved by OSD on 21 December 1956. This assignment became fully operational on 1 July 1957.

Telling the Army story to millions of Americans via the State Fair Circuit keeps the Army Exhibit Unit busy



Getting the Show On the Road

Major John O. Thisler

THE huge atomic cannon goes into action. . .

Nike missiles zoom up to destroy attacking aircraft. . .

Paratroopers descend to overwhelm an enemy . . .

Aircraft bring in supplies to the advancing ground army. . .

But none of it is real. It is not even a maneuver. It all happens with fascinating realism before some eleven million Americans, right in their own home towns. It is part of one or another of the nine traveling shows prepared by the U. S. Army Exhibit Unit which annually "play" to some four-score state fairs, trade shows, industry-wide exhibitions and other types of large indoor and outdoor public service events.

To many thousands of viewers, these shows are their only immediate contact with the Army. Many have members of their families in the service, and come to learn at first hand something about what their loved ones are doing, seeing, experiencing. Others are former servicemen who bring their chil-

MAJOR JOHN O. THISLER, Infantry, is Commanding Officer, U. S. Army Exhibit Unit, Cameron Station, Alexandria, Virginia.

dren. Still others are high school youths who soon will be subject to military service.

Many return year after year to see the newest exhibits. Mobile displays of this type have gained increasing recognition—by Army and industry alike—as perhaps the most effective direct, grass-roots method of telling the public the story of an institution, whether it be the Army or some large commercial firm.

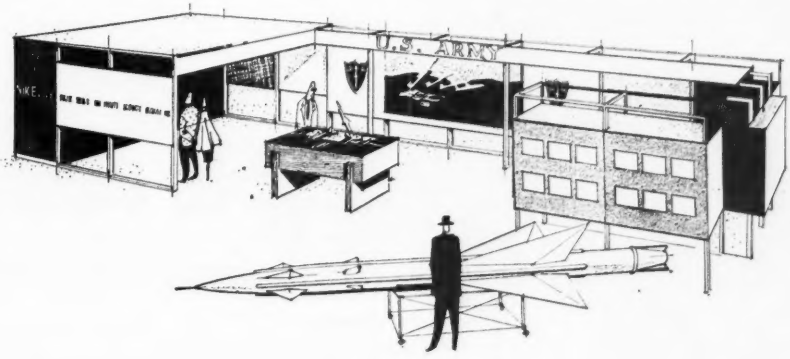
Actually the leading commercial firms support these fairs and trade exhibits in large measure, just as advertisers support newspapers, magazines, radio and television. Yet the Army's exhibits are provided with free space because they concern a subject of universal popular interest—*i.e.*, national defense.

THAT the Army has an interesting story to tell goes without saying. Putting it into concrete form, utilizing the techniques of modern display methods, is the main task of the Army Exhibit Unit, located at Cameron Station, Virginia. The displays may range from miniature models of a new weapon to one of the large specially equipped trucks outfitted with motion picture screens and projectors, animated displays and lighted panels.

A mobile exhibit unit offers the equivalent of a brief dramatic television program—with the advantage that the audience is right on stage. Frequently the audience will even recognize a well known television or radio voice—for such widely known commentators as John Daly, Edward R. Murrow and others frequently donate their services in the preparation of the films.

TAKE, for example, a missile exhibit which started its annual "road tour" at the Chicago Museum of Science and Industry in June, and continued through to the State Fair of Texas late in October. The display points up Army progress in operating missiles for the Nation's atomic-age arsenal.

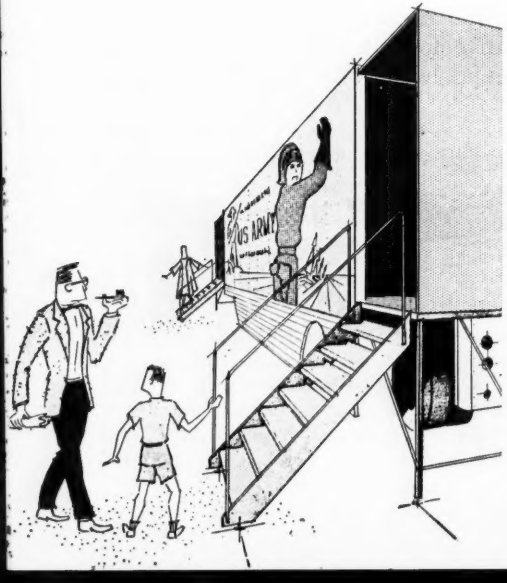
From this display the layman may trace the entire history and present development of missiles—something that most people would never otherwise have the opportunity or time to do. The history of rockets is traced from ancient Chinese origins to the present era, through paintings, large photo murals, a three-dimensional color slide theater, and motion pictures in color. In the exhibit are scale models of Nike-Ajax, Nike-Hercu-



les, Redstone, Corporal, Honest John, Dart, Lacrosse, Little John and Hawk.

Another exhibit entitled "Futurarmy" gives a preview of the things to come, set against the background of the Army of today and yesterday. Still another tells of the Army's role in assisting civilian agencies in disaster relief. Others include a Nike exhibit, an Ordnance display, the little-known story of the Military Police in the modern Army, and so on.

THE work of the Army Exhibit Unit today represents more than twenty years of cumulative experience since 1936 when a "Director of Exhibits" was designated by The Adjutant General. At that time, preparations were being made for the New York World's Fair. An invitation to the War Department for representation pointed up the need for a central group or agency to prepare such an exhibit —and to continue taking advantage of the shows which commercial and industrial firms were finding so advantageous as a form of institutional advertising.



A group of commercial artists was recruited and installed in a Washington, D. C., building under the Morale Division of The Adjutant General's Office. Some of these skilled artists and technicians are with the unit today.

With establishment in 1941 of the War Department Bureau of Public Relations, exhibit activities were placed under the Bureau's control. The Adjutant General's Office retained responsibility for exhibits, shops and studios. World War II generated a great interest in the Army and its work—an interest which quite apparently has never ceased on the part of the American public.

Late in 1945 the Exhibits Section returned to control of The Adjutant General as a responsibility of the Office of Technical Information. On 22 September 1950 the present U. S. Army Exhibit Unit was formally established with the mission of presenting to the American people "on a broad, nation-wide basis through the medium of exhibits, displays and other appropriate means, the objective and mission of the Army; progress made; public benefits from a peace-

time Army; the Army dollar and how it is used; and the need of an Army for the "security of the Nation."

Today the Unit comes under the Special Projects Branch of the Office of Chief of Information. In this way it is assured that Army public information objectives are met. The Special Projects Branch handles requests for displays and showings, deciding just which of the hundreds of invitations can be accepted. This largely depends on timing, geographical considerations, and size of potential audiences.

Prior to 1950 the organization had been staffed by civilians but with its establishment as a military unit, soldier-artists were brought in. Some of these had many years of experience as owners, managers or artisans in studios and shops. Others have enlisted directly for assignment to the Unit, under provisions of AR 601-234. Still others are assigned through the Army's system of classifying and assigning personnel with special aptitudes.

LOCATED in a post warehouse at Cameron Station are various Exhibit Unit shops—art, sign, carpentry (actually cabinet making), electric, design, machine, and model. There is also a photographic laboratory.

In a front office designers work on layouts for a new exhibit unit that will be taking the road next fall. Others are drawing blueprints of models to be produced in the various shops. Still others are working on dioramas and realistic models of the future battlefield.

Outside the building a trailer with expandable sides is being fitted with the completed dioramas, animated models, as well as special sound and lighting effects designed and built by the Unit.

A well-equipped photographic

Some of the exhibits are designed to be worked by the audience, as this machine gun emplacement with gun that actually "fires" electronically.

laboratory supplies picture support. Frequently actual weapons are moved into the Unit to be photographed or to serve as models for scale replicas, as was recently the case with a real Nike—minus warhead, of course.

LATE summer and fall is the "busy season" for the Army Exhibit units. But throughout the year, some of the trucks will be on the road, carrying some facet of the Army's story to thousands.

During the winter season the truck units are readied for the next series of dates on the road. Displays are brought up to date, or complete new shows may be installed. (One of the newer truck units has expandable sides, increasing the interior space by about 50 percent when set up.) Routings are worked out to insure variety of topical coverage in each geographic area. And all of this is done with a very small staff.

A TYPICAL day at a large exposition will find the exhibit team of two men—both trained to answer questions and make first echelon repairs of the equipment—on hand before opening time to insure that all is in readiness.

The fair opens and people begin arriving. A cross-section of the American public, they invariably are interested in what their Army is doing. All of them comment, have questions, discuss what they have seen and heard.

The animated atomic cannon model goes into action, the huge barrel comes into battery, it "shoots," then retires.

"Is that the gun that fires an atomic warhead?"

"Say, my boy wrote from Germany that one of those things is with his outfit."

"How far will that gun shoot, sergeant?"

Nike missiles zoom up to destroy attacking aircraft . . .

"Hey, look, that's the way it would work—that outfit out there five miles from town."

"What chance has an enemy aircraft of getting through to hit our city?"

Paratroopers descend to hit the enemy . . .

"How many men will one of those airplanes carry?"

"Dad, is that the way they did it when you were with the 101st?"

"Do paratroopers still get hazardous duty pay?"

Aircraft bring in supplies for the advancing ground Army . . .

"Look, that's how those paratroopers can keep going after they land."

"How fast do those parachutes bring that stuff down?"

"How high are those planes flying when they drop supplies?"

"How do they keep the stuff from drifting away from our side?"

EVERYTHING that viewers see may be in graphic form or on film but it is real to them nonetheless. Representatives of the Exhibit Unit must be prepared to answer thousands of pertinent and searching questions.

So it goes, until late at night when the fair closes its gates. And when one fair or exhibition is concluded, the U. S. Army Exhibit Unit truck rolls on to another town, carrying the story of the Army directly to the public that it is designed to protect.

What's New in

Training AIDs

Keep your organization current with the latest training materials by referring to this section in each issue.

TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned *NOT* to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlets 310-3 or 310-4.

Infantry Division. New and revised field manuals prepared for use by units of ROCID divisions include:

FM 5-132, Engineer Battalion, Infantry Division.

FM 6-18, Mortar Battery, Infantry Division Battle Group.

FM 6-21, Division Artillery, Infantry Division.

FM 7-21, Hq and Hq Company, Infantry Division Battle Group.

FM 11-10, Signal Battalion, Infantry Division.

FM 55-37, Transportation Battalion, Infantry Division.

Armor Division. New and revised field manuals prepared for use by units of ROCAD divisions include:

FM 17-1, Armor Operations, Small Units.

FM 17-20, Armored Infantry Units, Platoon, Company, and Battalion.

FM 17-33, Tank Units—Platoon, Company, and Battalion.

Survival. This new 21-series field manual provides information on how to travel, find food, water and shelter, and care for the sick and injured in arctic, desert, jungle, and ocean areas.

155-mm Gun M53 and 8-inch Howitzer M55, Self-Propelled. This new 6-series field manual is designed to assist commanders in developing gun sections of batteries into efficient smooth-working teams. Topics covered include individual duties and section drill, test and adjustment of sighting and fire control equipment, decontamination and destruction.

Nike-Ajax Battery Control Area Equipment Checks and Adjustments. FM 44-80A—a supplement to FM 44-80, January 1956—outlines the minimum daily, weekly, and monthly checks which must be completed on battery control area ground guidance equipment.

Procedure and Drill, Radio-Controlled Airplane Targets. This new 44-series field manual provides the usual procedure and drill type information for launching, flying, and recovery of radio-controlled airplane targets (RCAT).

Transportation Terminal Battalion and Terminal Service Company. FM 55-52 provides guidance for the activation, organization, training and employment of the battalion and service company.

Logistical Commands. A training circular in the 54-series, this publication covers the organization, employment, and operation of logistical commands, with emphasis on the flexibility of organization of the three current types.

Ranger Training. DA Pamphlet 21-( ) is a guide for field unit commanders in establishing and conducting a program of ranger type training.

Combat Arms Regimental System. This new Department of the Army Pamphlet explains the regimental system, answers questions arising from redesignations, and the means taken to retain the historical significance of regiments.

Army Aircraft Field Maintenance Shop and Supply Operations. TM 55-401 covers the establishment and operation of Army aircraft field maintenance facilities; it contains organization, staffing, and operating guidelines.

Landing Craft Operator's Handbook. TM 55-508 covers crew duties and responsibilities, operating procedures and other matters of landing craft seamanship.

Revisions. The following revisions will be published:

FM 6-135, "Adjustment of Artillery Fire by the Combat Soldier"—a revision of 1950 edition.

FM 10-37, "Quartermaster Petroleum Depot Company"—a revision of 1952 edition.
FM 21-20, "Physical Training."
FM 23-41, "Submachine Guns Caliber .45, M3 and M3A1"—a revision of 1949 edition.
TM 38-230, "Preservation, Packaging and Packing of Military Supplies"—a revision of 1951 edition.

TRAINING AIDS

Training Films which have recently been released include:

TF 3-2431, Radiological Surveys.
TF 3-2499, Individual Protection Against CBR Attack.
TF 5-2334, Emplacements, Intrenchments and Shelters—Part I—Introduction.
TF 5-2449, Explosives in Combat.
TF 6-2403, The Corporal Missile—Fueling Operation.
TF 10-2454, Unit Messing in the Field – Part II – Field Operation.
TF 10-2455, Emergency Use of the Parachute.
MF 10-8724, Recovery of Quartermaster Air Type Equipment.
MF 10-8726, Quartermaster Inspection and Maintenance of Air Type Equipment.
MF 10-8727, Extraction of Heavy Equipment from Aircraft in Flight.
GF 19-31, Riot Control Formations —Part II—Platoon and Company Formations.
MF 20-8668, Traditions and Achievements of the Army.
TF 21-2197, Camouflage for Scouting and Patrolling.
TF 33-2509, Guerrilla Warfare.
TF 55-2348, The Motor Vehicle Driver—Traction Aids and the Winch.
MF 55-8769, Safe Driving in Bad Weather—Part I—Light Vehicles.
MF 55-8770, Safe Driving in Bad Weather – Part II – Trucks and Tractor Trailer.

In addition the following parts of series of related subjects have been released:

Guided Missile Equipment—Nike—a series of films designed primarily for Engineer personnel:

TF 5-2462, Elevator Locking Bar Cylinder, Replacement and Adjustment.
TF 5-2464, Elevator Locking Bar Cylinder, Removal.
TF 5-2466, Part I – Four - Way Valves, Disassembly.
TF 5-2468, Two-Way Valve, Disassembly and Assembly.
TF 5-2469, Bleeding Door Cylinders.
TF 5-2506, Part II – Four - Way Valves, Assembly.

106mm Rifle—a series of films for military personnel conducting or receiving training in use of the 106:

TF 7-2433, Part I—Introduction to the Weapon.
TF 7-2435, Part III—Crew Drill on Vehicular Mount.
TF 7-2436, Part IV – Dismounting and Mounting the Rifle.

Basic Care of Patients—for use in training Army Medical Service enlisted and civilian personnel:

TF 8-2471, Part I – Cleaning the Patient's Unit and Making an Unoccupied Bed.
TF 8-2474, Part IV—Physical Comforts.
TF 8-2475, Part V – Feeding the Patient.
TF 8-2478, Part VIII—Preoperative Care.

Helicopter Flight Training—for units concerned with helicopter training and operations:

TF 46-2420, Intermediate Helicopter Flight Training—Part III—Approach Procedures.
TF 46-2421, Advanced Helicopter Flight Training—Part I—Confined Area Operations.
TF 46-2422, Advanced Helicopter Flight Training—Emergencies and Critical Conditions.

Ground Handling of Aircraft—for use in Army Aviation training programs:

TF 55-2503, Part I – Fixed Wing Aircraft.

TF 55–2505, Part II—Rotary Wing Aircraft.

Graphic Training Aids approved for production and distribution:

New

GTA 5–( ), Sniperscope, Infrared Set Number 1.

GTA 9–( ), Traversing Mechanism, 90mm Gun.

GTA 10–( ), Recovery of Air Drop Containers and Parachutes.

Revisions

GTA 9–2, US Rifle M1, Cal .30.

GTA 10–12, Proper Wearing of the Uniform.

ARMY EXTENSION COURSES

The following new or revised subcourses have been approved for publication:

Personnel Management I. TAG Subcourse 33. The Adjutant General's School, U. S. Army. Principles and functions of Army personnel management and related concepts of human behavior; characteristics of officer and enlisted MOS systems and the noncommissioned officer-specialist system as basic structures in Army personnel management.

Personnel Management in Utilization Operations. Subcourse 39. The Adjutant General's School, U. S. Army. Organization, purpose and functions of the unit personnel section with emphasis on personnel management control devices and procedures employed in the company and unit personnel section; officer and warrant officer classification in MOS; assignment, and requisitioning; enlisted classification, assignment and reassignment; enlisted requisitioning and surplus reporting, with emphasis on accounting for and adjusting personnel assignments by MOS.

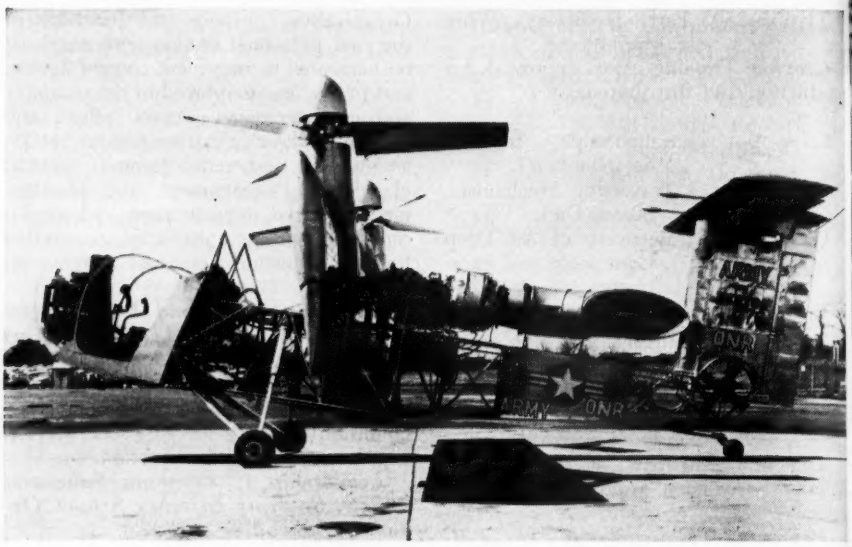
Garrison Supply and Food Service Program. Subcourse 11. U. S. Army Infantry School. Introduction to company supply; procedure for processing and turning in property; property accounting; property records; food service; supply economy and inspection.

Leadership I. Common Subcourse 49. U. S. Army Infantry School (Infantry Subcourse 9). An elementary understanding of human behavior to include physiological, psychological, and sociological factors; personal adjustment and methods of accomplishing maximum motivation; practices and techniques of effective leadership to include character guidance; use of the chain of command; conduct and code of an officer; command and individual responsibilities for public information; application of principles of leadership at company commander and battalion staff officer levels.

New Protective Mask

A REVOLUTIONARY type protective mask which eliminates the bulky conventional canister unit now is undergoing rigid tests. The new mask is expected to give troops a high degree of protection against chemical, biological and radiological agents for long periods of time with maximum comfort. Inhaled air is filtered through pads of lightweight pliable gas-aerosol filter material inclosed in cavities molded into the facepiece. The air intake is centered under the wearer's nose, while exhaust units are located on both sides.

"Tilt Wing" Research Aircraft



A FLYING test bed "tilt wing" turbine-powered vertical take-off and landing (VTOL) aircraft is being developed for the Army under contract by Vertol Aircraft Corporation, Morton, Pennsylvania. Takeoff is accomplished with the tiltable wing in vertical position *(top)* acting like a helicopter rotor. Transition from vertical lift to forward flight is accomplished by tilting the entire assembly combination forward *(bottom)*. Through studies on this craft, the Army hopes to eliminate need for prepared landing fields and also to achieve higher forward flight speeds of VTOL-type aircraft.

PARAGRAPHS
from
The Pentagon and the Field

Scheduled to go into effect along with the MOS Proficiency Tests (as announced in DA Pamphlet 611-2), the Army is developing a forward-looking promotion plan (Promotion Qualification Score) geared to help the most productive and highly qualified reach the top in their respective fields. The plan will be introduced gradually, probably not before January or February, 1958.

Initially, priority will be given to MOS's requiring long technical training, and in which reenlistment rates have been low. All enlisted personnel, beginning with those in grade E-6 and going down, will be allowed to work toward this Promotion Qualification Score.

This will be a composite total of points for these factors: MOS Proficiency Test Score, length of service in grade, ratings by commanders and evaluation boards, Army and civilian schooling, aptitude area scores and other special items to include decorations.

Instead of a promotion quota, a qualification score cut-off by MOS and grade will be announced, with the score set so that more men can be considered than will be selected. Thus local commanders will have flexibility in making selections from a zone of consideration.

Effective 1 July 1957 Army supply operations world-wide are being transacted exclusively in terms of item names, descriptions, and stock numbers established by the Federal Catalog System. The change-over from technical service stock numbers and descriptions to the new Federal identification data culminates 10 years of effort to provide a single uniform identification for each item of supply regardless of who manufactures or uses it.

Soldiers will get their first taste of the Army's experimental irradiated food prepared and served as part of a regular mess hall meal in a troop acceptance test to be conducted this winter at Fort Lee, Virginia. Foods will be selected and approved under direction of The Quartermaster General and The Surgeon General of the Army. Two companies of troops, or approximately 300 men, will participate on a voluntary basis.

An all-synthetic, heavy duty truck tire, made of butyl, a synthetic rubber created from oil refinery gases, has been developed under Army contract. Unlike the natural rubber product, the new tire does not deteriorate in storage. The product has been found to be at least equivalent or superior to military tires presently being manufactured.

Under the programmed Single Manager plan, the Military Air Transport Service (MATS) recently initiated a reorganization designed to streamline its activities. Under the new plan, all transport type aircraft engaged in point-to-point service are integrated into MATS which will serve all agencies of the Department of Defense.

To implement the plan and to balance the workload of the three divisions of MATS, a regrouping of areas of responsibility is effected. The Atlantic Division from headquarters at McGuire AFB, New Jersey, concentrates on flights to Europe, the United Kingdom, Iceland, Greenland, Newfoundland and Labrador. The Pacific Division, with headquarters at Parks AFB, California, handles all MATS operations in the Pacific area over some 30,000 miles of air routes. Continental Division with headquarters at Kelly AFB, Texas, operates all regularly scheduled military transport flights to Africa, the Caribbean, Bermuda and South America.

Approximately 800 officers have been accepted into the Logistics Officer Program since it was initiated by the Deputy Chief of Staff for Logistics in February 1956. Already, more than 200 command and staff positions throughout the world have been designated as Key Logistics Positions by the Department of the Army, and almost half of these positions have been filled with qualified logisticians from the Logistics Officer Program. More than 30 participants have been promoted to general officer grade since the Program was launched.

Designed to replace the 78 different sizes and types of engines now in use, a new family of air-cooled gasoline engines is being purchased by the Corps of Engineers as part of the Department of Defense Standardization Program. The new engines come in six sizes—½, 1½, 3, 6, 10 and 20 horsepower. At present the Army is buying engines in the first three sizes only.

The new industrial-type standard engine family will have a longer operation life with a maximum of 100 to 200 parts or assemblies required for stockage. This compares with the 23,000 parts that had to be stocked for engines of similar size in World War II. In addition to permitting maximum standardization and simplification, the engines will meet a wide variety of power needs. (See "Air Cooled Engines for the Army," August 1956 DIGEST.)

A basic patent for radar—considered to be as important and far-reaching in its military applications as was the first telephone patent to the commercial communications industry—has been granted by the U. S. Patent Office to Colonel William R. Blair, retired U. S. Army Signal Corps scientist.

The pulse-echo method of direction finding and ranging conceived by Colonel Blair was developed during the 1930's at the Signal Corps Laboratories, Fort Monmouth, New Jersey. Due to the high degree of secrecy surrounding its development, a patent application was not filed by the Army Signal Corps until June 1945.

First award of the silver Army Aviation wings to fifty Army Medical Corps officers stationed around the world marks the expansion of the Army's aviation medicine program. The badge—featuring an Aesculapian staff superimposed on the shield of the United States centering the wings—is awarded to officers who are qualified to conduct medical examinations for flying, exercise supervision over the health of flying personnel, and furnish medical advice related to Army medicine.

A new Army historical volume, Victory in Papua, *is the latest work to be issued by the Office of the Chief of Military History in the series entitled "The United States Army in World War II." The book covers the 32d Division's struggle on the steaming Papuan Peninsula. Priced at $6, the work is obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.*

Details of the program for mandatory and voluntary discharge of enlisted men found to lack job performance potential for the Army are spelled out in Department of the Army Circular 635-2. Minimum standard for retention of those serving on initial enlistment is a recorded score of 90 or higher in at least two of the aptitude areas of the Army Classification Battery. For Regular Army enlisted men other than those serving on initial enlistment, a score of 90 or higher is required in three aptitude areas.

Exceptions include those with 10 or more years active service in grades E-5, E-6 or E-7 until they complete 20 years service; winners of the Medal of Honor; holders of the Distinguished Service Cross, Navy Cross or Silver Star Medal until they complete 20 years service; partially disabled combat-wounded veterans until they complete 20 years service, and some others. An individual deemed to possess ability to absorb further training and to perform satisfactorily in the position for which trained, may be recommended for retention.

Eight Military Districts within the Second U. S. Army area are being consolidated into two new Corps Headquarters, (Reserve) under authorization granted to the United States Continental Army Command. They will be the XX and XXI U. S. Army Corps Headquarters (Reserve) located respectively at Fort Hayes, Ohio, and Indiantown Gap Military Reservation, Pennsylvania. The consolidation will serve as a field test, and success of the experiment in the Second Army will determine whether the plan is extended nation-wide. Primary goal is further improvement of USAR training by assigning responsibility to an Active Army organization created specifically for the purpose. Each Corps Headquarters (Reserve) will be commanded by a major general, responsible for supervision of training, administration and support of USAR units within the corps area.

Project Vanguard's man-made satellite, which will be placed in orbit during the current International Geophysical Year, will be tracked by six Army teams at stations extending from the United States to Chile. Built under the direction of the Army Engineers, the stations are located at Santiago, Chile; Antofagasta, Chile; Ancon, Peru; Cotopaxi, near Quito, Ecuador; Batista Field, Havana, Cuba; and Fort Stewart, Georgia.

The Army's newest amphibious support vessel, a beach discharge lighter, has recently been launched by the National Steel and Shipbuilding Corporation at San Diego. Named the *Lt. Col. John U. D. Page* in honor of an Army officer posthumously awarded the Medal of Honor for exploits in Korea, the versatile 338-foot ship is equipped to receive loaded wheeled or tracked vehicles from roll-on roll-off vessels by means of a ramp bridging the vessels at the stern. It then transfers the vehicles directly to the beach.

Organized to advance the Army's medical equipment development program, a Development Branch has been set up in the Research and Development Division, Office of the Army Surgeon General. Ideas and proposals for improvement of medical equipment or for development of new items should be submitted to the Office of The Surgeon General, Department of the Army, Washington 25, D. C.

New Cabinet Cookset

DESIGNED TO replace the Army field ranges now in military supply lines, a new portable cabinet cookset capable of feeding 50 men while reducing supply inventories and easing field maintenance, has been adopted. The complete field kitchen outfit, designed and developed by the Quartermaster Corps, will provide sufficient capacity for serving multiples of 50 men per meal, individually or in a group.

Consisting of cabinet, utensils and a gasoline burning fire unit, it may be used with the field range in a group set-up. Component costs are expected to be reduced about $50 per unit. The new cookset needs only 11 repair parts instead of the presently required 49, and weighs 114 pounds as compared to 137 pounds for the field range. It can be operated in transit.

Training of specialists in all aspects of operation and maintenance of engineer equipment required for the production of liquid oxygen, dry ice, compressed air, and electricity for the Redstone missile, is conducted at the U. S. Army Engineer School, Fort Belvoir, Virginia.

Regular Army enlisted personnel interested in the liquid oxygen career field should apply through command channels for the Liquid Oxygen Generation Course (5-R-F3). Prerequisites include credit for high school chemistry and algebra, or a standard score of 45 or higher on GED tests 3 and 5, high school level; normal color perception; nine months or more of active duty service remaining after completion of this 10-week course; and standard score of 100 or higher in aptitude area GM.

Official Notes

REGULAR ARMY APPOINTMENTS. AR 601-105 set forth administrative procedures necessary to consummate Regular Army appointments made under provisions of various Army Regulations.

REBUILD POLICY. AR 750-4 prescribe general policies governing rebuild of equipment other than ammunition in oversea commands.

REPORT OF LOSS. AR 210-84 cover procedures of notification of various agencies in event of loss, theft, or unlawful disposition of firearms or ammunition.

CODE WORDS. AR 380-105 prescribe policy and procedure concerning use of code words, nicknames, short titles, and devices for similar purposes.

PROCUREMENT INSPECTION. AR 31-7 prescribe the procedure to be followed by the Executive Director, Military Subsistence Supply Agency (MSSA), and the military services within continental United States in connection with procurement inspection of Single Manager-controlled subsistence supplies.

ACTIVE DUTY FOR TRAINING. AR 140-220 prescribe administrative procedures for Army Reserve members on active duty for training as individuals, not as members of Army Reserve troop program units.

CONARC. AR 10-7 set forth the mission and responsibilities of the Commanding General, United States Continental Army Command.

ENLISTED TRAINEES. AR 611-257 provide for reports to supply the Department of the Army with data necessary for the assignment of replacement stream enlisted personnel, and those being trained in strategic reserve units for world-wide requirements.

CIVIL SCHOOLING. AR 350-245 establish a civil schooling program for Army officers of the Transportation Corps under provisions established by AR 350-200 and in accordance with the Career Development Plan of the Corps.

ARMY AIRCRAFT. AR 705-42 amplifies Department of the Army policies for designation and redesignation of Army aircraft.

EXCHANGE SERVICE. AR 60-10 govern provision of exchange service within the Army and Air Force.

CIVILIAN TRAVEL FUNDS. AR 35–3100 prescribe procedures governing advances of funds made to civilian employees of the Department of the Army to finance expenses incident to official travel, and authorized movement of household goods and personal effects.

SINGLE MANAGER. AR 32–100 outline the general policies, procedures, relationships, and responsibilities of the Single Manager for Clothing and Textile Materiel, and the Departments of the Army, Navy and Air Force, and the Marine Corps, as they pertain to the supply of clothing and textile materiel.

AR 31–17 prescribe responsibilities with respect to budgeting for requirements of the Single Manager Subsistence Supply System and establish procedures for distribution of funds, accounting, and reimbursement under the Subsistence Division, Army Stock Fund.

Forklift Truck and Shielded Tractor For Hazardous Terrain

POUNDING surf, clinging beach sand, soft snow, rough fields, steep grades mean little to a new type of rough-terrain forklift truck designed by the Quartermaster Corps for rapid handling of military supplies under the most rugged field conditions. Two models—one of 6000-pounds, the other of 10,000-pounds capacity—can move through surf and five feet of water to transfer supplies from landing craft to inland storage points through areas inaccessible to conventional handling equipment.

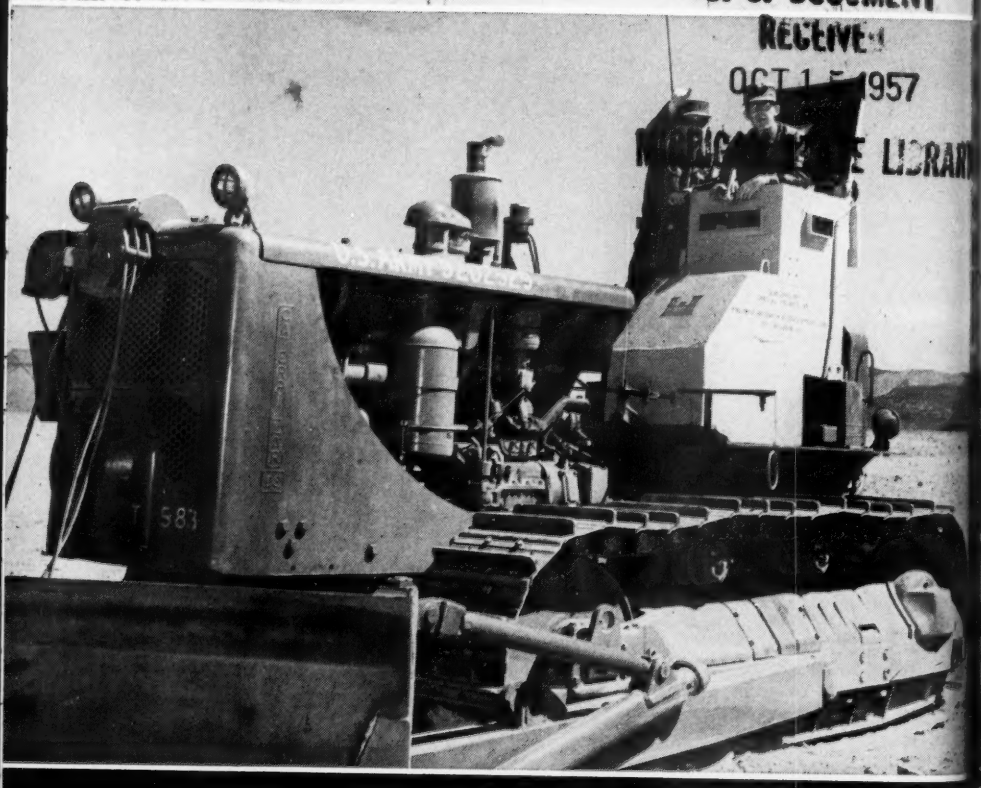
Equipped with both front and rear axle steering, the trucks can move sidewise at a 20 degree angle; body and forks can be tilted right or left, independent of axles; a side-shifting device will move the forks two feet to either side of center. The forks themselves also act as a built-in jack capable of lifting the front wheels free from miring ground while the truck backs off.

The trucks, manufactured to Army Quartermaster Corps specifications by the Clark Equipment Company of Battle Creek, Michigan, are expected to facilitate operations and reduce manpower needed to handle supplies where no landing docks or railroad sidings exist.

DESIGNED to protect bulldozer operators from radiation hazards, a unique cab has been developed by the Army Corps of Engineers. Made of lead and weighing approximately 5,000 pounds, it allows Army Engineers to start early clean-up of radioactive areas.

The cab accommodates the operator, tractor controls, a radio, and special radiation meters that record the amount of radioactivity in the area. Lead glass windows provide visibility on four sides. The cab is pressurized with fresh, filtered air.

(For views of Forklift and Bulldozer, see back cover.)



THE U. S. ARMY—A KEY TO PEACE